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A MONTHLY JOURNAL DEVOTED TO THE ELEVATOR AND GRAIN INTERESTS.

PUBLISHED BY
Mitchell Bros. Company.
(INCORPORATED.)

Vol. IV.

CHICAGO, ILLINOIS, NOVEMBER 15, 1885.

No. 5.

SUBSCRIPTION PRICE,
ONE DOLLAR PER ANNUM.

ESTABLISHED 1863.

CHANDLER-BROWN CO.,

—Grain, Seed and Provision—

COMMISSION,

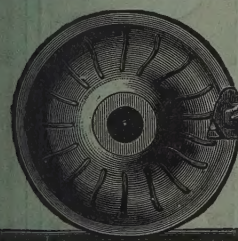
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97 Board of Trade.

MILWAUKEE,

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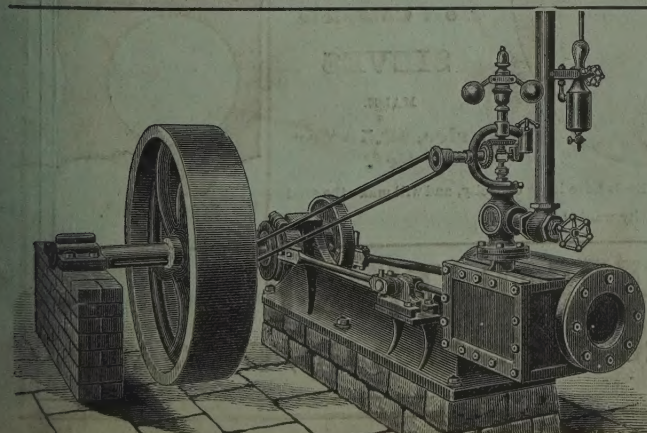
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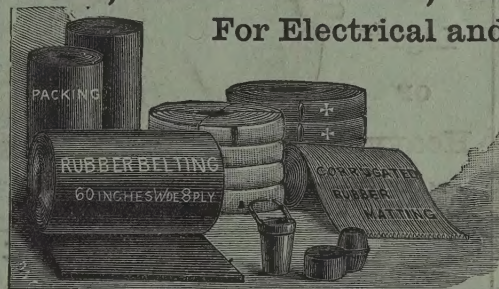


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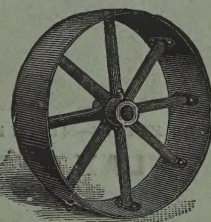
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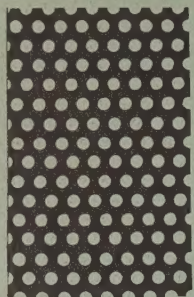
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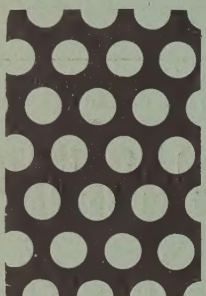
1-16 inch.



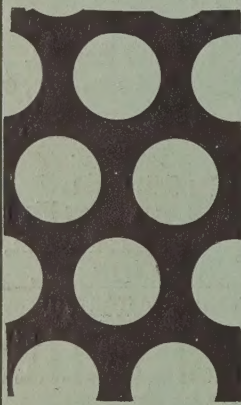
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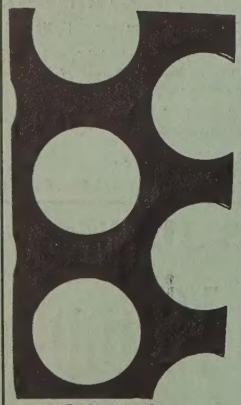
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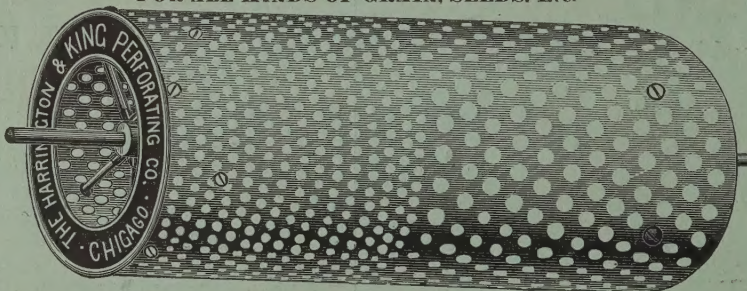
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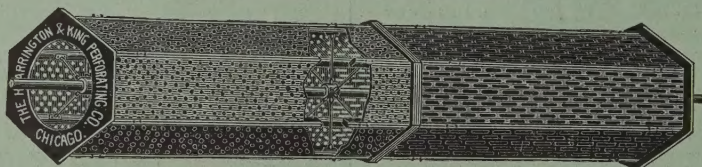
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For holding Sand and
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Fairbanks'
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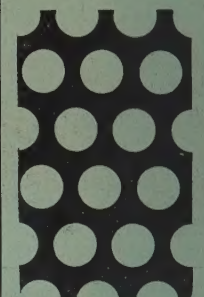
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1/4-inch—Wheat.



3/8x5/8 in., Oval.



1/2x3/4 in., Oval.

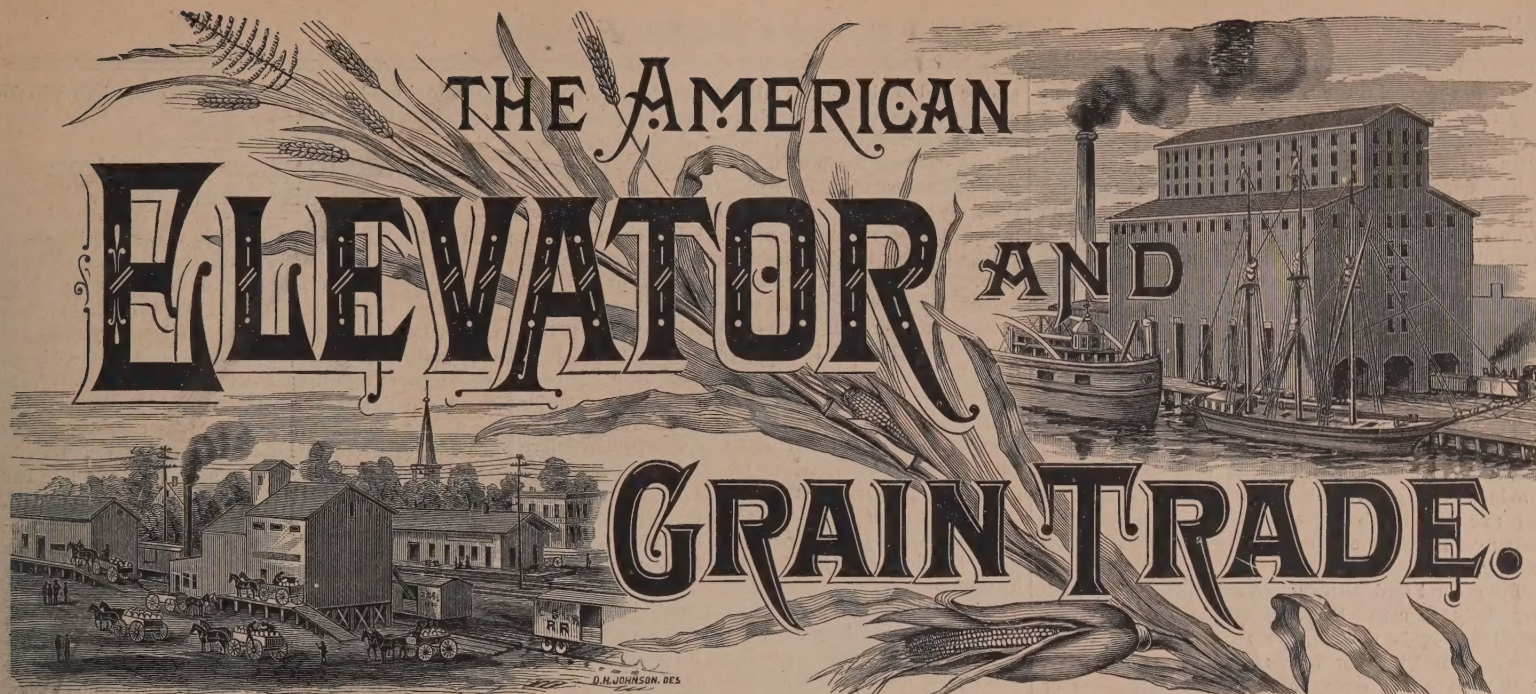


3/4-in., Round.

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THE MILWAUKEE GRANULATOR.

Of late years the roller mill has largely supplanted the mill burr in the manufacture of flour, and now as the result of long study and experiment by one of the most successful firms engaged in the manufacture of rolls and the equipment of flour mills, a roller feed mill is offered the public, not as an untried device, but one which has already proved its utility in practical operation.

The MILWAUKEE GRANULATOR shown in the accompanying illustrations is a complete roller mill with all

gether or apart, and kept in the position given them, whether they are grinding grain or running empty. In grinding all kinds of grain more or less foreign substances, such as nails, screws, stones, bits of wire, nuts, etc., find their way into the hopper. As these would cause damage to the rolls, a spring has been provided which permits the rolls to yield momentarily, thus allowing the foreign substance to pass through.

Machines are furnished both belted and geared. The manufacturers, however, consider the geared machine superior for general work, as the gears are necessary to preserve the differential. A noiseless gear is made when

necessary the gears are merely taken off and a level put on the shaft of each roll. The rolls are set closer or further apart by means of the hand wheel in front of the machine. The rolls are in position when barely touching each other. The spring is adjusted by means of the nut in front of the hand wheel.

As will be seen from the illustration, there is a scraper for each roll, to keep the rolls clean. The scrapers are in position when they barely touch the rolls.

The speed of the machine is from 500 to 550 revolutions per minute. The capacity of a No. 1 machine is from five to twenty bushels per hour, and of the No. 2

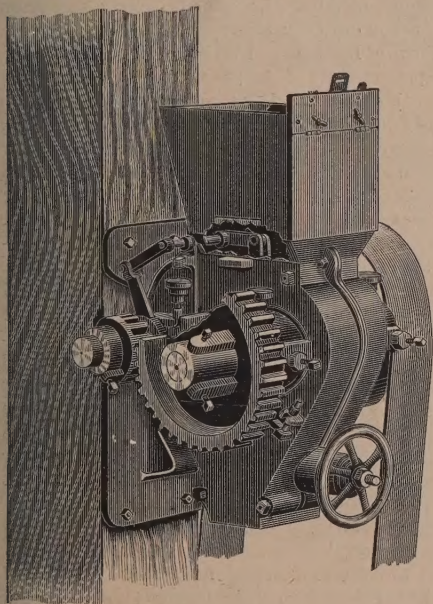


FIG. 1.—PERSPECTIVE VIEW OF THE GEARED GRANULATOR.

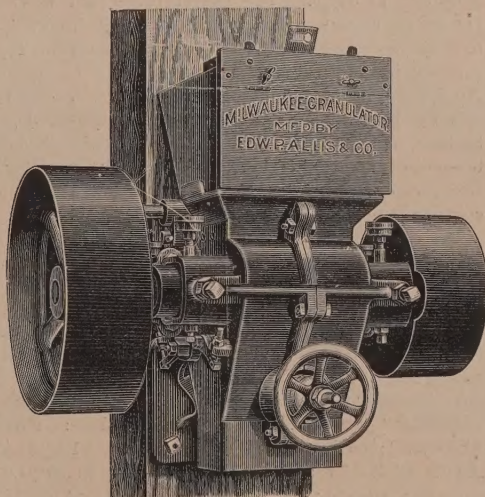


FIG. 2.—SHOWS A PERSPECTIVE VIEW OF THE GRANULATOR.

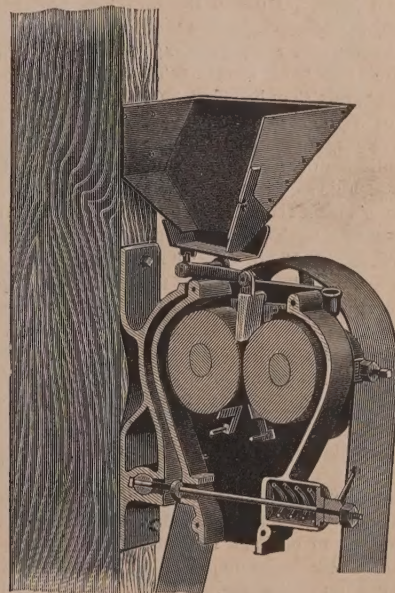


FIG. 3.—SECTIONAL VIEW OF GRANULATOR, SHOWING STAMPER, SCRAPERS, SPRING, ETC.

the necessary devices for adjustment, but nevertheless so simple in operation that any one can manage it successfully. In its present form it differs from the granulator hitherto built by the same firm in the items that the feeding device has been improved very materially, a dust-tight hopper added and a few minor improvements added, including the strengthening of the main working parts of the machine. It is especially designed for grinding corn for meal or feed, screenings, grass seed, oats, barley, rice, rye, wheat cockle or mixed grain.

The rolls used in this granulator are of chilled iron, suitably corrugated for the class of work to be done, and are identical with those used in the same firm's Standard Roller Mills in flour mills, being corrugated on the same machines. By means of a hand wheel in front of the machine the rolls can be quickly and easily set to-

desired, but the regular geared machines make very little noise if a lump of tallow is put in the gears occasionally. One point in favor of the geared machine is that it grinds as well both at low as high speed, the gears giving a positive differential at any speed, which it is impossible to get on a belted machine.

The rolls are corrugated spirally, one roll running about three times as fast as the other, the teeth of the slow roll pointing up, while the teeth of the fast roll point down.

As will be seen, the granulators are attached to a post. For a No. 1 Granulator a post 8x8 is recommended, and for a No. 2 machine a post 10x12. The granulators are firmly fastened by means of bolts passing entirely through the post, and secured by nuts and washers on the other end. The rolls seldom require leveling, but when this is

machine from ten to forty bushels per hour, depending, of course, upon the kind of grain and quality of work. The rolls in the machines, with good treatment, should last from two to five years in feed mills and other establishments where a great deal of grinding is required of them. For farmers' use they should never require replacing. Whenever the rolls do wear out they can be replaced at a nominal price.

The distinctive advantage claimed for this machine is, that grain passing between the rolls is thus sheared or cut, instead of mashed, and the point of contact being so small, there is no chance for heating. Feed ground on this mill will be found sharp and granular, and of an even fineness, with but little flour in it, making, when mixed with water, a good, wholesome feed, and not a pasty mass, as when the feed contains flour. For grind-

ing corn and meal this machine is claimed to have no superior. It produces a nicely cut, sharp, and even product, with but little flour, and no matter how finely ground, the meal will always be sharp and granular.

The manufacturers recommend it to elevators and mills, to grind screenings and feed, whether mixed with corn or not. It can be left running, and grind the screenings as they come, for the machine requires scarcely any attention, and the rolls retain their proper position whether feed is passing through or not.

With properly corrugated rolls it makes an excellent malt mill, making little or no bran dust. So for brewers' and distillers' use, it is claimed to be especially adapted.

The evenness of product and capacity depends upon the number of reductions made. It is generally best to make two reductions to produce an even and nicely cut product. As a general thing each reduction calls for a separate machine, the rolls of each succeeding reduction being corrugated finer than those in the machine preceding.

For general feed purposes two reductions are advised, especially on corn. For farmers' use, and where very small capacity is wanted, one reduction is sufficient. For corn meal, three or four reductions are necessary, with three or four separations. For screening, one or two reductions are sufficient. Corn for distilling purposes should have two reductions, as also rice. Rye requires two to three reductions. When separations are desired the manufacturers can also supply "scalpers."

This machine is made by the well-known firm Edw. P. Allis & Co., of Milwaukee. A neat circular has been issued by the firm, which will be sent interested parties who apply for it, together with any additional information in regard to this machine which the reader may desire.

FROM THE WINTER WHEAT REGIONS.

[Special Correspondence AMERICAN ELEVATOR AND GRAIN TRADE.]

KANSAS CITY, Mo., Nov. 9, 1885.—During the past month there has been little to encourage elevator men at this point. None of the elevators have been taxed to any great extent, and a number of owners still claim that they are not paying expenses. However, very few are so badly off as this. There is in store at present less grain than has been held at this season of the year for a long time. Altogether there are but 917,128 bushels, not one-half the capacity. Last year there was fully ten per cent. more, and the receipts and shipments, which go so far toward enlarging the average elevator man's bank account, were a little over 350 per cent. The past four weeks elevators have received grain as follows: Wheat, 332,137 bushels; corn, 88,638; oats, 48,193; rye, 8,585. Last year during the corresponding period the receipts were: Wheat, 1,169,409 bushels; corn, 293,699 bushels; oats, 21,156 bushels; rye, 20,465. From a glance at the above figures it must be evident to anybody that either elevator people last year must have coined money or that the profits this year are exceedingly small. In order to show still more conclusively the curtailment of business in elevator circles, let me give some more figures. Up to to-day during 1885 elevators of the city report that they have handled 3,260,725 bushels of wheat, 2,673,027 bushels of corn, 170,093 bushels of oats and 128,596 bushels of rye. Last year's figures for the same period, however, put the above sums into the shade. There were 5,146,235 bushels of wheat, 6,422,889 bushels of corn, 174,019 bushels of oats and 98,452 bushels of rye received. Thus it will be seen that the greater the scope of comparison the worse the showing. No wonder then that elevators are not paying large dividends this year.

Reports from Kansas indicate that the crop of winter wheat is looking finely. Of course it is impossible to make any estimates upon the probable yield. The acreage, so far as can be learned from the imperfect returns, is estimated at 2,762,400 acres of winter wheat. In 1884 there were but 2,151,868 acres planted. Thus it will be seen that if next season is only an average one there will be more winter wheat raised in Kansas than ever before in its history. Therefore while there is little to attract in the state of affairs as now existing, there may be some consolation reaped by allowing hope a little play.

It goes then without saying that there are no very important or extended improvements under way in any of the elevators throughout this section. The same may

also be said of the various milling interests, although a number of the latter have enlarged their capacity. This was commenced, however, before it was known how limited this year's crop would be. For instance, a new mill was started up at Harper, Kan., a couple of weeks since, the capacity of which is 150 barrels per day. The principals of the company are F. H. Rosecrans and W. W. Clark, who lived formerly at Wellington, in that state. They bought the site and ruins of the old mill burned down nearly two years ago, and have in the just finished structure all of the latest improved patterns for making flour. If these gentlemen could have looked into the future before making their contracts they would have put off investing until a more auspicious time. Now if the mill runs to its full capacity there will be no surplus of wheat in that section before long, and grain will have to be shipped from distant points, just as many Kansas mills are doing at present.

On the 24th ult. the elevator and corn sheller of Daggett, Goldman & Co., at Brookfield, Mo., were totally destroyed by fire. The loss was about \$8,000; half covered by insurance.

The market for all classes of cereals has been the dullest noted for a long time. Buyers have made purchases only for immediate use, and the speculative features of the market have not been very noticeable. In fact, options and futures are a bugbear at present. No body seems willing to do anything, and on account of this lethargy many commission men are hardly paying running expenses.

There are several schemes under way looking to the permanent bettering of this point as the grain center of the Southwest. The one which seems to be most promising is the construction of a road from here to Northern Nebraska, making an air line route for grain. The line has already been surveyed and is said to pass through the richest wheat and corn belt in the land. Citizens here and along the route are subscribing liberally, and there is every prospect for commencing the work of grading as soon as the elements may permit next spring. This will bring a section of country in direct connection to this point whose trade has never been handled here. It will also result in tempting many of the grain dealers in Nebraska to look to this point for a depot to market their offerings.

No. 2 red wheat has declined two cents during the four weeks just passed, from 77 to 75 cents. The highest price paid was 80½¢. and the lowest 70¢., making the extreme 10½¢. apart. No 2 soft has declined 3½¢., from 89¢. to 85½¢. The lowest price paid was 82¢. During the same time No. 2 corn has fallen from 32½¢. to 29¾¢., a decline of 2¾¢. There has been but 4½¢. variation in the price of this cereal during the month. No. 2 white has fallen off 3¼¢. to 30½¢. To-day the elevators have in store 844,222 bushels of wheat, 30,484 bushels of corn, 37,771 bushels of oats and 4,651 bushels of rye. One elevator, owned by the Marsh Bros., who have a large linseed oil mill at this point, contains at present 125,000 bushels of flaxseed.

The stocks of flour are not large, and it is estimated that, if all the mills stopped running for two weeks, and no receipts were brought in from outside sources, the city would be barren of this product. Millers report a good demand for their output from southern points, though none of them are running full time. All millers have a fear of getting too great a surplus with the present unsettled condition of the market. Sales in sacks are made at present on the following schedule: Fancy, \$1.95@2.05; choice, \$1.65@1.75; family, \$1.40@1.45; XXX, \$1.35@1.40; XX, \$1.15@1.20; X, \$1.00@1.05; superfine, 90@95¢.; fine, 80@85¢. Bran in first hands is selling at 41@42¢. per cwt. Mill feed has been uniformly dull and prices have been on the downward move right along, bran being full 10 cents lower than four weeks since.

Mr. H. D. Rush, who was burned out last month at Leavenworth, Kan., has bought the mill formerly owned by Mr. E. V. White at that point, and is running full time as brisk as ever, turning out 300 barrels of flour per day.

The Nordyke Mill Works at this point report only a fair demand for machinery. These works handle some very fine patterns of elevator and milling machinery.

The Kansas City Mill Furnishing Company have put in several sets of rollers for mills throughout Kansas and Missouri, but consider this a decidedly off year.

Messrs. B. F. Pratt & Co., of Cincinnati, had expected to commence the manufacture of cooperage at this point about Nov. 1, but finding that it would be impossible to get started until very late in the season, have postponed

operations until next spring, when operations will be begun on a large scale.

EXTORTIONATE ELEVATOR CHARGES.

Attention has been called of late to the discrimination practiced against Chicago in the matter of through rail shipments. It has been shown that a lower rate has been given on through shipments to the East from points west of Chicago than the sum of the two rates on the same grain would be if shipped first locally to Chicago and afterward reshipped from this point East. This amounts to discrimination against Chicago, in fact; but it appears to be a case of justifiable discrimination. The trouble lies deeper than with the railways, and is, in fact, a matter over which they have no control. The owner of the produce has his own interest to protect, and this is of greater importance to him than the interest of any city through which his grain may be obliged to pass in transit to the seaboard. In other words, he can see no advantage to himself in having his grain shipped to Chicago, dumped into an elevator at a cost of a cent and a quarter a bushel, and perhaps the very next day loaded again in an East-bound car for shipment to another elevator either at Buffalo or New York, where it will be subjected to a similar charge but at a lower rate. One elevation is about all he can stand, and if the grain has got to be finally landed in an Eastern elevator he certainly can not be blamed if he gives Chicago the go-by and so escapes one elevator charge, and especially, as is generally the case, when that charge represents his whole profit on the shipment.

This exorbitant tax upon produce passing through Chicago has come to be regarded as such an evil that even the railway managers begin to realize that unless something is done to stop it, their bills of lading must designate some other objective point than Chicago. In cases where the lines west of Chicago can not spare their cars long enough to be taken East and returned, the grain is changed in some instances from one car to another by hand, at a cost of about \$1.50 a car, but even this is a vast improvement over the old charge of about \$6 a car, made by the elevators. There are to-day nearly three millions of dollars accumulated charges on grain now in store in our Chicago elevators!

The Board of Railroad and Warehouse Commissioners, as the representatives of the people of the state, should look after this matter. It is true that the elevators are generally owned and controlled by close corporations, and in some cases are almost family affairs, but as their functions are public the law has placed them under the surveillance of the Railway and Warehouse Board. That board has the right to inspect books, examine employees, and do everything proper to ascertain the actual condition of the business and the profits paid to its owners. There is danger that this board has become so absorbed by their attention to railroads that the elevators are neglected. We have reason to believe that if the commissioners perform their duty as required by law, it will result in a reduction of elevator charges that will benefit the grain raiser and possibly prevent disaster to the grain business of Chicago. Will the commission move in the matter? If they do not, or will not, the elevator men themselves will not have to live long to find out that they have killed the goose that laid the golden egg, and be no longer able to realize that there is "millions in it," for, as every railroad manager knows, after shipments are directed in a certain channel for any length of time, it is not always an easy matter to divert them. Chicago has great interests at stake, and the question is, will she see that the people's interests are hers?—*Inter-Ocean*.

KEEPING AWAY RATS.

This is how, it is said, the Germans get rid of rats: A mixture of two parts of well bruised common squills and three parts of finely chopped bacon is made into a stiff mass, with as much meal as may be required, and then baked into small cakes, which are put down for the rats to eat. It proves an exterminator.

The complaint comes from Kansas that "the corn is too tall to gather without ladders." The same old story

When machinery is used, the Drew Oil Cup will save 50 per cent. of the oil. Write for circulars. Borden Sellick & Co., Chicago, Ill.

THE COKER PATENT POWER GRAIN SHOVEL.

The grain shovel, operated by power, is one of the recognized necessities of the grain trade. The rapid handling of our immense crops would be almost impossible without the use of the power shovel, which now finds a place in every large elevator, as well as in many mills and other establishments where grain is handled in quantities.

Our illustration shows the Coker Patent Power Grain Shovel with the Metcalf Patent Automatic Attachment, in practical operation. The shovels, independently of each other (if two are used), are taken to the rear or any

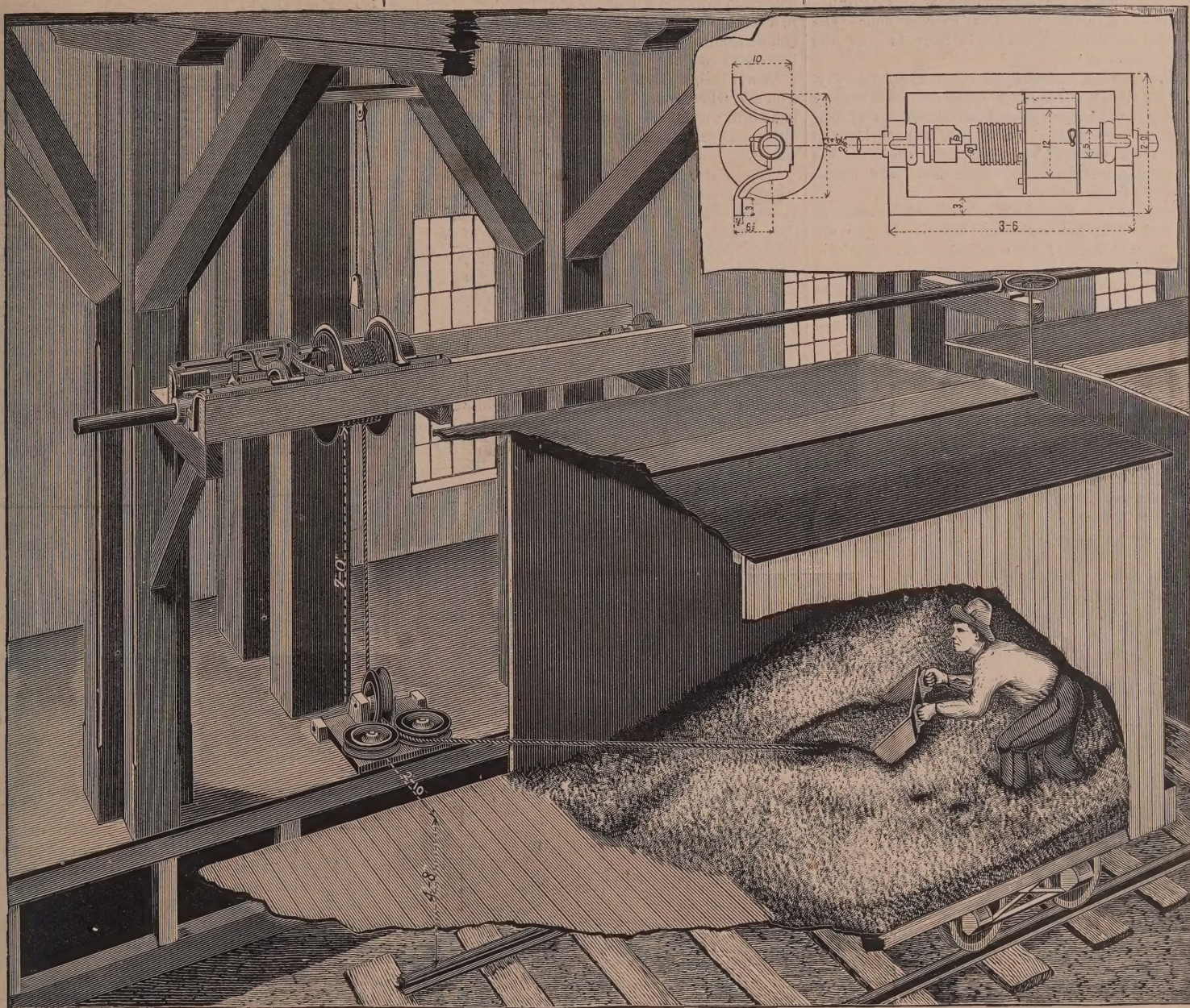
STER & COMSTOCK MFG. CO., of this city, who have about 200 shovels with this screw and nut principle in operation in various parts of the United States. They have placed a number of them in flour mills, and have many testimonials as to their efficiency. They will furnish any desired information to interested parties.

VIEWS OF AN EXPERT IN PRACTICAL GRAIN DRYING ON THE PRESERVATION OF GRAIN AND FLOUR.

Mr. J. C. Bates, of Chicago, an expert in practical drying, being asked to give his views and experience in

ence and observation will avail in accomplishing anything towards the end sought, if not in pointing out sure and certain methods for the preservation of grain, about which there is at present so much discussion, then this talk will be to some purpose. That there is necessity for giving the matter of grain immediate serious consideration is sufficiently demonstrated by the frequent postings the past season in New York and Baltimore as well. That there is a like necessity on the part of millers, those engaged in milling in certain sections of the United States, who, in the past several years, have suffered severe losses from their flours souring, know full well.

"But, to come back where I started: At the time this



THE COKER PATENT POWER GRAIN SHOVEL WITH THE METCALF PATENT AUTOMATIC ATTACHMENT.

part of the car; the momentum given to the spool by the unwinding of the rope as the man goes into the car, causes the cam, which works on the paper friction wheel, to fly up. The moment the man stops the cam drops back and trips the catch or hook which holds the clutch in position; this at once falls into the clutch on the spool, and the shovel is in gear. The nut on the screw now commences to travel toward the clutch on the shaft, and at the given point pushes it out of gear, delivering into the sink a large quantity of grain. Two men can unload a car of 500 bushels of grain with a set of shovels in five to eight minutes, running the shaft at fifty revolutions.

The shovel is automatic, and goes in gear at any point in the car when the man stops, and its positive action throws it out of gear at the car door. In the automatic attachment the cam working on the paper friction pulley is very simple and requires but little strength to work it.

The manufacturers of the Coker Shovel are the WEB-

reference to the best methods for preserving grain and flour, said that it might sound very much like blowing his own horn for him to say anything on this subject for publication. He would, however, say that whenever the question in reference to grain is settled, the preservation of flour becomes an accomplished fact. All receivers of grain, elevator proprietors, and millers are alike interested in the satisfactory solution of this question, not to mention their very large but much neglected constituency—the consumers. Continuing, he said: "A considerable percentage of the first named I doubt not will agree with me in my conclusions, based, as they will be, upon my observation and experience in the past thirty years. Familiar with flour and grain since the days of the California clipper ships, having made delivery of many cargoes for long voyages 'around the Horn,' and within the tropics, to California, South America, East Indies, Australia, Cape of Good Hope, West coast of Africa, and other distant points which formerly drew large supplies from the Atlantic seaboard, if my experi-

country enjoyed the extended export trade in bread-stuffs as then stated, the flour thus exported was made almost wholly from Virginia wheat, the 'Haxall' and 'Gallego' mills, at Richmond, taking the lead. Next to these were the celebrated 'Brandywine Mills,' at Wilmington, the other important mills at the South being at Baltimore, Alexandria, Georgetown, and Fredericksburg.

"It was quite important that flour shipped on these long voyages should keep sound, as otherwise it was of but little value at its destination. Mills, therefore, that catered for the export trade were extremely careful to select for the purpose only thoroughly dry wheat, and in this particular line the mills at Richmond and Brandywine took and held the lead. Repeated experiments were made in shipping New York state flours, 'Genesee flour,' as it was then called, which were always in liberal supply at the seaboard, but with most unsatisfactory results. The latter would soon succumb to the heat and humid air of the tropics and become sour, sometimes

even before the flour was landed. Whoever has sailed within the tropics and experienced the intense heat upon the deck and top sides of the vessel, can best understand why.

"I recently cut from a milling pamphlet or newspaper something so directly to the point, in reference to flour, that I will read it:

"It has long been a problem with millers how to secure the quality of dryness in flour to the extent desired. The greater our export trade in breadstuffs becomes the more necessary it becomes to secure the very best keeping qualities in our flour, and dryness is the most essential to make it keep. Some means of securing dryness is especially needful in flour produced by the low grade process, for that product retains moisture much more than does the New Process flour. The successful artificial evaporation in flour is now the great desideratum."

"Experience has demonstrated conclusively that dryness is not alone needful in low grade flours, but equally necessary in the highest grade and best grades of patent process manufactured. It must be alike evident to the miller and the grain merchant that if the grain has the necessary quality of dryness the flour will not be lacking in that particular.

"I once asked an old practical miller how it was that he could make flour that would stand the test of hot climates when so many of his competitors were unable to do the same thing.

"My son," said he, "you must know that wheat, after being stored, must sooner or later go through a sweat. If it be ground before it goes through such sweat then the product (flour) is liable to sweat and become sour. If this sweating occurs after grinding, the flour surely becomes sour, first a soft sour, and later forms into hard lumps and cakes; and there is something singular, too, my son, about flour stored above running water undergoing this chemical change. Something, I do not know precisely what, turns the contents of the barrel, under such circumstances, into one hard, solid lump—so hard, in fact, that one would need a crowbar to make any impression on it."

"But how about wheat—does the sweating spoil that?"

"By no means. If the wheat be spread immediately, and the surplus moisture dried out, it is then in the best possible condition to handle, for it cannot sweat again, and can be depended on to keep wherever sent. If left to itself, however, in the sweat, it will heat and rapidly deteriorate."

"Here, then, we have in a nutshell an easy solution in reference to the preservation of both wheat and flour, viz: by storing the wheat dry, ridding it at the beginning of any surplus moisture liable to induce sweating, and in event of indications of sweat to dry it immediately.

"But to spread wheat or other grain in these days of receipts of millions of bushels is wholly impracticable," I think I hear somebody say. And so it is. This matter of drying grain is one to which I have devoted much study and experimenting until I have succeeded in drying very large quantities at trifling cost, and in drying it evenly, without parch or shrivel, or other evidence of artificial drying. It can be done as easily as rolling off a log. The more I have looked into the matter the more I am convinced that there is not the least necessity for out of condition or weevily grain.

"What remedy would I suggest? Not the mixing of good grain with the poor, for that is nothing more nor less than a fraud, a direct, palpable fraud upon the consumer, a temporary expedient, a makeshift to get rid of the grain, whereby good grain is sacrificed to the poor, which can never be restored to a proper condition by any such expedient, much less kept in condition.

"Primarily it is for the monied men and financial institutions making advances on stored grain to take the initiative in providing a remedy. If they will but insist upon standards of dryness for grains stored, and require all such stored grains to be brought up to and kept up to their standard, the remedy, I feel, would be certain and speedy. Buyers would then compel sellers to deliver on purchases grain about the keeping qualities of which there could be no question. Instead of buying moisture they could then buy the dry article. But can this be done? Is it practicable?"

"As a practical dryer I, for one, am ready to contract and give responsible guarantees to accomplish such work, to put up quickly alongside or in vicinity of any elevator an inexpensive, substantial, and easily operated machine to dry grain at an average of a fraction of a cent

per bushel, to dry to an extent that will insure the grain keeping, and to dry at any place all the grain that offers. There is not any trouble about the means of drying it. That work, as I have already shown, can be done easily. But no method whatever can avail, or will be used to any extent, so long as existing methods of doctoring grains by mixing them is permitted. There is altogether too much profit in that business for those engaged in it to abandon it.

"Another important point is that the elevator bins, before receiving grain of the new crop, or whenever run out, should be perfectly dry, and thoroughly cleaned and ventilated. Personally, if I were running my air treating apparatus at any elevator I should ask the superintendent to turn into any empty bin, just before refilling it, a continuous blast of the very dry air which that machine supplies in large quantities, until every part therein were thoroughly cleansed and rendered bone dry.

"A word more as a practical dryer, and I am done. You ask, 'How would I prevent weevil?' That is a far more difficult problem. I would keep the grain in condition, and then if weevil appeared I would exterminate it.

"The construction of my grain dryer is such that it enables me to get directly at that pest, and by use of a very simple but thoroughly safe and wholesome material I quickly destroy it. I should make use of the same material when ventilating and drying the bins, to make sure there were no animal life left therein, as dryness alone is no sure protection against such vermin.

"Reference has recently been made to the method of a sheet iron cylinder and air pump which took the prize offered by the French Academy. There could not have been much competition for that prize certainly. That method is wholly impracticable, and very much like an old one in vogue years ago on whale ships, of having the 'use last' stores put into air-tight casks, practicable only on a small scale, as when applied to the limited necessities of a ship's crew, and wholly impracticable when attempted on any more extended scale.

"Air pumps, it is true, initially effect a reduction of the air, but the manner in which this process is carried on, to say nothing of the cost of cylinders capable of holding 250 bushels each, would make that method very expensive.

"No; if you want to preserve grain, the only practical method for doing it, yet discovered, is that which has been generally recognized since the days of Joseph, in Egypt, which is to put dry grain in a dry bin and keep both grain and bin dry."

THE CORN WEEVIL.

The weevil family, says G. H. Mell, in *The Southern Cultivator*, may be recognized by the long snout with which they bore into objects for depositing their eggs. The minute mouth parts are near the extremity of the prolongation. The body is quite hard, and when the insect is disturbed it will feign death by drawing up its legs. The larvæ are white, thick, fleshy, footless grubs, and they feed on seeds, bark, leaves, roots and flowers. Not less than 8,000 species have been discovered of the insect. The grain weevil (*sitophilus granarius*) is about one-eighth of an inch long. It attacks both wheat and corn. One female is said to produce about 6,000 descendants in one year. The eggs are deposited on the grain in granaries, etc., and the larva after hatching enters the kernel by a small hole almost imperceptible. After eating out the entire inside of it, it cuts out its way and is transformed into a beetle. Kiln-drying destroys the insect. Another species called black weevil (*sitophilus oryzae*) infests corn, wheat and rice. The female of this species bores a hole in the grain, and, depositing one egg in each kernel, dies after all eggs are laid. The larva eats of the grain until winter, when it is transformed into an inactive pupa, which transforms into a beetle in spring. Besides there are a number of troublesome moths found in granaries, mills, etc., which are called "tineaus" by the entomologist. The female lays thirty or forty eggs on the grain, and the larva, like that of the grain weevil, enters the kernel through small holes, closing the orifices with its castings. After it has eaten out one grain, it unites others to this by means of a web, devouring them in like manner. When full-grown it retires to some crevice, constructs a cocoon and passes into the pupa state, in which it remains during the winter. In spring it is transformed into moth of a creamy white color, and with a long brown fringe.



Issued on Oct. 13, 1885.

DRIVE CHAIN.—Edward Y. Moore, Evanston, Ill. (Model.) No. 328,050. Filed March 15, 1885.

CLEANING, HULLING AND GRINDING MILL.—Joseph Breitenmoser, St. Louis, Mo., assignor of one-third to Wm. H. Doolittle, Washington, D. C. (No model.) No. 328,105. Filed Oct. 31, 1882.

MACHINE FOR MAKING CONVEYOR FLIGHTS.—Sylvanus Cox, Indianapolis, Ind. (No model.) No. 328,013. Filed March 31, 1884.

Issued on Oct. 20, 1885.

FRICTION CLUTCH.—Chas. Kaestner, Chicago, Ill. (No model.) No. 328,786. Filed Aug. 3, 1885.

GRAIN DRIER.—John C. Klauder, Philadelphia, Pa. (No model.) No. 328,788. Filed April 2, 1883.

GRINDING MILL.—Henry Cutler, North Wilbraham, Mass. (No model.) No. 328,656. Filed Dec. 13, 1884.

Issued on Oct. 27, 1885.

CAR STARTER.—John A. Lane and James M. Thorp, Detroit, Mich. (No model.) No. 329,319. Filed April 17, 1885.

MACHINE ROLLER CHAIN.—Wm. Morgan, Birmingham, county of Warwick, Eng. (No model.) No. 329,407. Filed Feb. 18, 1885. Patented in England March 13, 1883. No. 1,352.

HORSE POWER.—Oliver W. Kelly and Louis F. Dieter, Springfield, Ohio. (No model.) No. 329,394. Filed Sept. 1, 1885.

FANNING MILL.—Jacob Luxem, Racine, Wis. (No model.) No. 329,431. Filed Dec. 1, 1884.

GRAIN DRIER.—James Milne, Aberdeen, Scotland, assignor to Milne Bros., same place. (No model.) No. 329,198. Filed Dec. 31, 1884.

GRAIN DRIER.—Anson Wolcott, Wolcott, Ind. (No model.) No. 329,422. Filed April 28, 1885.

Issued on Nov. 3, 1885.

CAR MOVER.—Clarence V. Greenamyer, Western, Neb. (No model.) No. 329,642. Filed April 23, 1885.

FRICTION CLUTCH.—Wm. B. Satro, Hartford, Conn. (No model.) No. 329,866. Filed July 13, 1885.

GRAIN ELEVATOR.—George S. Bricker, Newville, Pa. (No model.) No. 329,710. Filed Jan. 23, 1885.

GRAIN SEPARATOR.—James M. Smith, Et. a, Cal. (No model.) No. 329,602. Filed Feb. 28, 1885.

FLAXSEED IN THE CHICAGO MARKET.

The receipts of flaxseed in Chicago during last month aggregated 1,875,000 bushels of fifty-six pounds each; and for the first three months of the current crop year they were nearly 1,600,000 bushels larger than, and the shipments more than 1,500,000 bushels in excess of, those for the corresponding period of last year. About 250,000 bushels have been exported already to Europe, and as much more has been ordered for export. These enormous shipments of flaxseed are undoubtedly the direct result of the low prices of wheat last fall and winter. Consequently in the far Northwest much flax has been grown this season instead of wheat, with the success shown by the above figures. And the flaxseed has brought such good prices that there is some danger flax raising will be overdone for another season. The most gratifying feature in this unusual movement of flaxseed is the fact that we are supplanting Indian flaxseed in the European market, when Indian wheat threatens to become our dangerous competitor in the same market. Within a few years past Calcutta flaxseed has even been shipped to our Eastern markets. Thanks to the abundant crop and low freight rates, it can fairly be expected that this season the Eastern states will largely be supplied with the home product instead of with the Indian seed. In consequence of the American competition Indian seed is reported as having materially declined in price in Europe in spite of the failure of the crop in Russia.

The U. S. Government is using large numbers of the Howe Scale. Borden, Selleck & Co., agents, Chicago, Ill.



[We invite correspondence from every one in any way interested in the grain trade, on all topics connected therewith. We wish to see a general exchange of opinion on all subjects which pertain to the interests of the trade at large, or any branch of it.]

THE BOSS MANIPULATOR.

Editor American Elevator and Grain Trade:—The Minneapolis Millers' Association stated that all the mills would shut down on Nov. 1. For the week following that date they made one of the largest runs in their record. They now assert that unless the winter rates to Chicago are lowered every mill on the Falls will stop its wheels before Dec. 1. Whether they will gain their point remains to be seen; but to me it is pleasant to see the Minneapolis crowd bulldozing their old allies. Possibly it bodes good to the rest of us.

The truth is that the Millers' Association is just learning and using its power. Until the present year it has been content to manipulate the price of wheat at little stations in the Northwest. Now, with the prestige and wealth it has acquired, it is beginning to bulldoze the markets, raising the price of wheat, lowering it, and threatening to shut down, just as it happens to suit their fancy. I am anxious to see whether they will succeed with the railroads. For one, the growth of this association has to me all along seemed pregnant with danger. The state of Minnesota has the overgrown giant on her hands; what will she do with it? And I may add, what will Chicago do about it?

Yours,

McLEOD.

THE BOILER TRADE.

Editor American Elevator and Grain Trade:—As steam power is the basis of all manufacturing industries the state of the boiler trade is a fair indication of the condition of manufacturing, whether it is reviving or going down. The following recent sales will certainly show that there is an improvement in the condition of manufacturing and the number of repeated orders among the sales show the appreciation these boilers are held in by parties who have used them before. We have on hand, unshipped for Cuba, 1,694-horse power, 917-horse power of which is for parties who have ordered before and the following orders are in hand for parties in this country: Insane Asylum, Elgin, Ill., 75-horse power; Department of Docks, New York City, 20-horse power; Columbus Buggy Co., Columbus, Ohio, 250-horse power (second order); Patterson Bros., Pittstown, Pa., 208-horse power (third order); Studebaker Bros., South Bend, Ind., for their Chicago building, 400-horse power (fifth order); Church & Co., New York City, 146-horse power (fourth order); Butler, McDonald & Co., New York City, 272-horse power (fourth order); Cornell University, Ithaca, N. Y., 61-horse power; Matthiesson & Wilcher's Sugar Refining Co., New York City, 1,500-horse power (seventh order); S. D. Warren & Co., Worumbo, Me., 416-horse power (third order).

Yours truly,
New York, City.

BABCOCK & WILCOX Co.

THE HENNEPIN CANAL.

Editor American Elevator and Grain Trade:—I trust you will allow me to differ with the opinion so often expressed in your columns as to the "duty" of the government to take the Hennepin Canal under its wing along with the score of other projects, each of which demands its share of public money.

It is assumed by nearly all the advocates of the Hennepin that this so-called "improvement" is demanded by the entire Northwest. This is by no means the case. It certainly is not by the country tributary to Milwaukee or Duluth, both of which points afford a water route to Buffalo and the East at rates cheaper than the cost of towing on the Hennepin and Illinois & Michigan Canals to Chicago alone would amount to.

Another thing strikes me as bad faith on the part of the advocates of this measure. They state that the canal will not cost much; only six or seven million dollars. They must know better than that. Such a canal would be a mere ditch. It seems to me that they hope to get the first appropriation under false pretenses, relying on

the fact that several millions have already been sunk in it, to get the final millions for completion. This has been done in scores of cases before, when good money has been voted "to save the money" already spent. Let Illinois and Chicago build the canal. The canal convention in New York voted down a proposition to ask the Federal Government to improve the Erie. Let Illinois and Chicago profit by the example.

Yours,

H. P. P.

WOULD IT WORK?

Editor American Elevator and Grain Trade:—Inclosed find our subscription. We fully appreciate the value of your paper to the grain trade, and like the full and free interchange of ideas it contains. We deal largely in mill feed, which we elevate in our bucket elevators, thereby creating a great quantity of dust all over the house. We have thought it could be elevated with an exhaust and suction fan, like those used in planing mills for removing shavings and dust. We would like to have an inquiry in your paper on this subject. And also whether it would elevate oats.

Yours resp'y,

CALLAHAN & SONS.

Louisville, Ky.

CONNECTING THE MISSISSIPPI AND THE LAKES.

Editor American Elevator and Grain Trade:—In your October number an extract is given from the *Inter Ocean*, which contains a very grave error on a subject of vital importance to our people, and to their greatest material interests. The mystery of former errors as to our American navigation is so great, and has been so deadly in destructive and preventive influences—tending to confusion and loss—that it would not be right to allow this also to pass unnoticed. Says the *Inter Ocean*: "The Hennepin Canal is for the benefit of the Northwest, and New York and Boston as well. The scheme is to construct a waterway for commerce from the Mississippi River to the chain of Great Lakes. To aid in this project Illinois proposes to donate the Illinois and Michigan Canal to the government."

Now, the act of conditional cession, voted on by the people of Illinois over three years ago, does not make any reference or allusion whatever to the construction of the Hennepin Canal. And this is perfectly right, for the Hennepin Canal is a separate and distinct project. And it should stand or fall on its own merits. But instead of this, the time of the conditional cession of the Illinois and Michigan Canal is being wasted in the attempt to urge another and distinct work, of minor importance, and in no way essential to the completion of a suitable connection between the Great Lakes and Mississippi systems of navigation, whose beginning by our people (of the nation and state) dates back to 1823. Sixty-two years have passed; the work is only one of moderate cost (for the nation), and of no serious engineering difficulty, yet it is still unfinished. And now, beyond the shadow of a doubt, a deliberate purpose and powerful influences exist to frustrate the popular effort that must be made in Illinois and other states before the United States Government will act. Of the five years allowed by the conditional cession voted by the people of Illinois Nov. 5, 1883, three have already expired. And if the people of Illinois and of the great states of the Mississippi Basin and Great Lake region are longer misled by various errors and pretenses, we may be very sure that the needed action by Congress cannot be had in time, and that the conditional cession will expire by its own limitation, leaving obstacles that many years more will surely pass before the work via the Illinois, linking the vast inland navigation of these states, can be finished. Every high interest, every commanding duty, requires that there should be no further delay. To this end there should be no deviation from the object so long pursued and so long frustrated by errors—errors promoted, sometimes, by powerful opposing influences.

If all will but be true to our own interests and duties this work can soon be finished. The coming Congress should provide fully for this link of connection, and for the reasonable clearance of river channels to the Gulf. And when this is done it will be practicable, if the same energy is used as at Suez and Darien, and on our Pacific Railways, to complete the Illinois and Michigan Canal and the Illinois River work in one year, by using the electric light and other facilities that now exist along this line, and that can be brought to it. The resources of these great interior states can never be utilized and developed in the most advantageous manner for the com-

mon good of our people, without the full, free use of this great inland navigation, designed and prepared by God in nature. And this in turn never can be reached until man does his part, and clears out the snags and wrecks, and completes the connection between the Mississippi and the Lakes by the Illinois River and Illinois and Michigan Canal. To destroy, or neglect, or betray the many years of efforts and sacrifices of the past, would be highly criminal, and highly dangerous in many ways. Why not unite and finish the work? Delays are always dangerous, and there is now no sort of excuse or good reason for delay.

W. T. STACKPOLE.

Fairbury, Ill., Nov. 11, 1885.

THE CORN CROP.

Although nearly 2,000,000,000 bushels of corn have been grown this season in the United States, the quantity available for consumption has been greatly reduced by wet weather after the crop was out of danger from frost. Still the corn crop is so abundant that the price of the article has already receded in the speculative markets to such a low point as to leave but little profit to the farmer. The price in the Chicago market for the past few weeks has ruled as low as thirty-eight cents for delivery here next May. This the farmers will hardly consider an inducement to take the trouble of cribbing their corn for the winter, especially in sections so remote from a market as to use up very nearly all of the above sum in transportation charges. Wastage of large quantities during the winter in the country is likely to be the result. There are indications, however, that with the money on hand, about 20,000,000 bushels will be sent to the Chicago market, and a little rise in prices may increase that quantity to 30,000,000 bushels. This quantity seems small in comparison with the whole crop; but it is quite a considerable portion of what is shipped from the farm, and still more of what will be left for shipment after the winter drain is over.

A PHILADELPHIA SEED WAREHOUSE.

The new warehouse of Messrs. Johnson & Stokes is located at 219 Market street, Philadelphia, extending through to Church street, a distance of 200 feet. The first floor is devoted entirely to their mail orders and retail business, which, they inform us, notwithstanding the general business depression, has more than doubled itself each year for the past five years. This floor is fitted up with over 4,000 drawers, bins, and compartments, each labeled with the variety of seed it contains. At the numerous counters and tables a small army of employes are kept busy filling and packing mail orders. The second floor on Church street is devoted to papering or putting up seeds in small packets, printing the bags, labels, etc. The Market street end of the second floor is devoted to agricultural implements of various kinds, prominent among which we noticed the celebrated Planet, Jr., goods in immense quantities, already packed for shipment. The third floor is devoted to the filling of wholesale orders and storage of garden seeds; on this floor there are hundreds of large compartments filled with bags of seed, each compartment having a printed sign giving name of the variety it contains. The fourth floor is devoted to the storage of improved farm and field seeds, seed, grains, etc. This entire floor was filled from floor to ceiling with immense piles of the various seeds, each carefully marked by a board sign, indicating the variety. A portion of the fifth floor is also used for the storage of farm and field seeds; another portion is used for testing the vitality of all seeds in boxes and pots of earth before being sent out to customers. The Church street end of the fifth floor is entirely separated from the Market street end, and is devoted entirely to the recleaning of various garden and farm seeds, being fitted up with modern improved machinery for this purpose. The upper floors are all connected with the street and basement by two elevators, one front on Market and one back on Church street. In the cellars are found numerous bins containing from 300 to 500 bushels each, filled with seed potatoes. These bins are specially adapted for their safe storage until spring, when they are barreled and shipped to their customers in all sections of the country.

GRAIN—ITS STOWAGE, STORAGE, AND PRESERVATION.

[CONTINUED FROM LAST MONTH.]

Another method of preservation of breadstuffs has been resorted to in Spain. They were constructed on the principle that the two greatest inconveniences which oppose the preservation of grain are heat and dampness; besides these are also those which equally oppose most powerfully the preservation of ice, and a good icehouse suggested all that appeared to supply the necessary conditions for complete preservation. The trial was therefore made of an icehouse, and accordingly an experiment was made by a grain merchant near Madrid. The wheat which was tried had been already attacked by weevils and had to be removed; another trial was made with sound grain. It held out for three years in a perfect state of preservation, and subsequent trials proved the success of the experiment. Another trial was made with tight metallic granaries of sheet lead bent into cylindrical shape and well soldered together. These granaries after being filled with wheat were closed and placed on the upper stories, on the ground floor, and in the cellar. The results have been more satisfactory than even the silos excavated in the ground. The lead in its metallic state does not oxidize without the contact of the air.

For greater security these granaries were lined with impenetrable paper, pasted well against the lead, and could be constructed with zinc in the same manner. Recent experiments show that our former knowledge of the process of fermentation was very limited, and that several of its phenomena, and the change which it affects among the various substances, are no less striking and important in the several applications to the art of living, and indeed this latter is, from day to day, more and more based upon scientific principles. The process of fermentation requires a temperature of from 40 to 100 degrees Fahr., together with the presence of water and contact with air containing germs of vegetable organisms. In order that we may have sound grain and flour, there must be something done to put an end to this fermentation in stores and granaries, and drying is one of the surest ways to accomplish this. With our extended seaboard and inland seas by the great lakes and rivers, there is a trade carried on between state and state which far exceeds the foreign exports of the United States, and where our breadstuffs are required with an increasing market, and in order to prepare the grain or flour so as to withstand the effects of moisture in transit or store, it should be thoroughly dried by some means without the direct action of fire. Grain is different from most other articles of merchandise. Wine is an increasing quantity. Breadstuffs are a constantly decreasing quantity. When wheat and other grains are deposited in a granary, besides being fluctuating in value, vermin prey on it and germination and decomposition help to add their ruin. If man would imitate the most thrifty of all insects, the bee, which hermetically seals up its food in the honey cells, it would be a further step toward an advance in our boasted civilization. We see meats, fish and vegetables stored up in cans and rendered durable for years, and yet our principal food staple, grain, is often left to germinate and rot without resorting to any artificial process of preservation. This should not be so. We should pay as much attention to the preservation of our breadstuffs as other nations having less of it, as every bushel wasted in this way is so much loss. The city of Paris allows to the preservers of its reserve a franc and a half a quintal per year when she furnishes the granary, and two francs when she does not furnish it. Granaries of stone, lined with enameled brick, are the most to be found in use. An arrangement for a granary which costs little and is within the reach of small farmers, is an arrangement by which it keeps wheat free from moisture and allows ten or fifteen times as much into storage room as by the ordinary methods most in vogue. Weevil will not increase in numbers, and mice will be kept away. In the barn for the purpose of experiment, or in high granaries prepared for the purpose, four wooden pillars are placed upright, bringing the planking to the greatest suitable height; the greater the height the more will be the gain thereby. These four pieces of vertical wood are connected by cross-pieces from two to three feet distance in the square. These cross-pieces are repeated every two or three feet until they are raised to the top. There are in the vertical pieces interior grooves four inches square, and on the cross-pieces also. These grooves receive and support a hopper made of planks. Upon the four sides

in the rising grooves, osier hurdles are placed, joined at the four corners, and fastened by pegs of wood. This made every three feet with the supplementary coffers twenty inches high on the sides and twenty-eight inches in the center, gives the shape of a hopper, which is terminated by an opening two inches square and furnished with a little sliding door to open or shut. This door is eight inches above the lower coffer, and so on as they rise up. Supporting a like pile of ten or a dozen coffers thus supplemented, it is clear that wheat would be sufficiently aired, that mice could not enter, nor weevils increase. Sweating would be impossible, and grain could be removed with little expense, for all that needs to be done is to place, raised two feet above the flooring, a rolling box or small cart, into which all the wheat in the first box or coffer at the bottom would fall. Then the wheat would scatter of itself when falling. Thus having emptied the lower coffer, shut the door and open the next, and so on to the highest; in this manner a single man would remove two or three hundred bushels in a short time, and with very little cost. Thus it can be seen that on a base of three and one-half feet square, a hundred and more hectolitres of wheat can be stored better aired than when put in sacks, running no risk from diminution or deterioration if a good situation is selected, and the expense is next to nothing.

Grain and flour merchants, as well as millers, should adopt means to preserve breadstuffs from heating and subsequent loss, if not, indeed, to improve its quality and increase its value. It has been calculated that from five to seven million dollars are annually lost to American millers and shippers of breadstuffs by chemical changes from internal moisture, and this loss can be avoided by resorting to some means of freeing the flour and grain of its internal moisture, and by paying more attention to its preservation in storage and transit. In countries where there is little moisture, flour is not so liable to heat, but even allowing for this, drying is always a sure safeguard against loss when the flour or grain is intended for lengthened storage. Gluten is very liable to undergo a change when any moisture is present, and this of course renders the flour unfit for panification. A test was made by the French Government to prove this. An experiment was made in the Navy Department with some flour which was sent to the Island of Martinique for the purpose of the test. Several barrels were filled with dried and others with sun-dried flour. An equal number were filled with flour from sun-dried wheat, and two were filled with flour from dried wheat. In order to make the test more practical, both dried and undried grains were put into half a dozen barrels, besides those already mentioned.

The result was that all the dried flour and flour from the dried wheat were found good, while the flour ground from the undried wheat, and the undried flour, were worthless. The German Government has not been behind in making experiments, and it has very wisely established the custom in the provision departments in placing the flour manufactured in April and May, when the atmosphere is filled with vegetable dust, on the market and into use, so that the moisture cannot have any effect on it. The manner in which flour is packed has a great deal to do with its preservation, and as it is well known to those who have made a study of the subject, flour is often spoiled by the absorption of foreign matter, so that it will be seen it should never be stored near odorous substances.

American sour flour is often one of the items in the price-list of the Liverpool papers. This flour must have been damaged by water or moisture on the voyage. There is a good deal of the flour damaged on the lakes and canals, when with care much of this could be avoided or entirely prevented, but where flour heats from its own moisture, the carrier is not to blame, as the thing is liable to happen in store. A great many advocate the drying of grain or flour before packing it. Attention was directed to this subject in France in 1868, which happened to be a very wet year, and much of the stored flour became heated, and was attacked with mildew, in consequence of which it lost much of its nutritive value. To obviate this, drying machines were introduced, and found to work successfully. They were in the form of a long vertical cylinder, in the interior of which a spiral plate extended from top to bottom and revolved on a spindle. This plate was heated by steam pipes, and the flour to be dried was received in a spout at the top and carried down on the warm spiral plate. The moisture was carried off by a funnel, and the flour discharged at the bottom in a dry room. The flour was

then cooled, and packed in water-proof bags, where it was kept until required for immediate use.

Vegetables and most organic bodies will remain unchanged for a long time in a dry atmosphere, while they will decay rapidly if exposed to moisture. The climate of Minnesota, Dakota and Kansas is much drier than that of Great Britain, or in fact any portion of Western Europe, so that our flour generally contains less moisture, and is not so liable to heat as theirs; but, allowing for this, it has too much moisture for a lengthened storage or a long sea voyage. The London Corporation and some private parties have their granaries in the locality called Bridgehouse, at Southwark, and these are built upon two sides of an oblong place. The windows, furnished with trellises, look toward the northeast in one row, and to the north on the other. All the windows are about a meter in height, and have no shutters. Each granary has three or four floors, but the ground floor is only used as a store room for bags, etc. In some places they put into the interior of the granaries a net-work of brass wire, about a meter in height, with close mesh, so that vermin cannot pass through. Some put upright planks upon which they place others parallel to the horizon, and forming an acute angle with the first, with the same view, to banish rats and mice, for, independently of the grain which they devour, their excrement and urine dampen it and cause much of the grain to spoil. In the building of these granaries the idea is to make them solid, and expose them to the wind, which has least moisture and is most drying. Before storing the wheat is first well cleaned, and all foreign substances separated from it. After being thrashed it is thrown with a shovel from one side to the other for some time, so that all the rubbish will remain between the two piles of wheat, and that which falls in the center is sifted, in order to separate the good grain from it in case any should fall there. It is then taken to the granaries, spread about six inches thick and turned twice a week.

At the end of about two months it is laid about twelve inches thick, turned about once a week, and sifted more or less, according to the dampness or dryness of the season. At the end of five or six months it is put in layers of about two feet and is turned about twice a month, and sifted once a month. At the end of a year, the layer of wheat is made three feet and a half in thickness; it is now turned every month and sifted in proportion in the same time. After the grain has lain two or more years, it is turned once every two months and sifted every three or four months, and so on according to the brilliancy, hardness and dryness of the grain. An empty space of about one meter is left on all sides of the chamber, and another of two meters in the center of the whole length, so as to have room to turn the wheat as often as may be needed. Sometimes wheats have been kept in the London granaries for thirty years and over.

The older it is, the more farina it gives in proportion to its quantity, and the bread made from it is very white and delicate. The grain loses nothing in effect but its superfluous humidity. Chemical analysis shows that wheat and corn, and also the flour and meal manufactured from them when under the influence of moisture, air and heat, are either partially or entirely changed, so that the ultimate principles of each of the grains named, oxygen, hydrogen, carbon and nitrogen, combine in new proportions, and of course form new compounds. To this process of decomposition the general name of fermentation is given. It differs according to the substance acted upon and the circumstance in which the article is placed. There were formerly only five varieties of these processes known; the saccharine, in which starch is changed into sugar; the sugar, in which sugar is converted into alcohol; the ascetic, in which alcohol and other substances are converted into vinegar; and the putrid fermentation or putrefaction, which characterizes the decomposition of nitrogenous substances, as wheat, rye, corn and vegetable azotized substances, so that grain of all kinds should be prevented by all means from resolving itself into its elements.

Much of the winter flour arriving in England is generally found to be more or less damaged en route. This is also true in regard to much that reaches New York City from the West. Its nutritive value is impaired, and it is sometimes unfitted for export, and one of the most potent causes of this impairment is moisture. Experiments have been made by the Agricultural Department showing its effects. Various samples of wheat placed in an oven for twelve hours, at 220 degrees Fahr., containing a boiling saturated solution of salt, lost in weight from eight to ten grains per 100; flour so treated

lost from ten to fourteen per cent. On being exposed to the air from two to three days a weight was gained in the case of wheat from one to three grains over the original weight; and in that of flour from nine to twelve grains, showing that wheat, if once properly dried, suffers much less from exposure than flour. Under the influence of heat, with considerable moisture, flour undergoes a lactic acid fermentation. This will occur from exposure in the holds of vessels, especially in humid climates. This is said to be one cause of the bad reputation of London flour, as it greatly injures the adhesive quality of the gluten, and also changes the starch into glucose, or dextrine. The latter change was found by experiment to take place at a temperature not above 68 degrees Fahr. The department advise the reduction of moisture in the breadstuffs exported to from five to six per cent.; absolute desiccation is not necessary. For this purpose kiln drying has been used, but far the most satisfactory results are obtained by the use of steam-heated cylinders. Great care and ample time is taken abroad for this purpose. In Russia sheaves of wheat suspended on poles are carried into huts and dried in ovens. The barrels, or vessels for shipment especially of flour and meal, should be rendered as far as practicable impervious to moisture, or however well dried, the meal will be injured.

It is well known that flour has the quality of readily absorbing water from the atmosphere in addition to that which it naturally contains, about 15 per cent. Nitrogenous substances, under the influence of moisture, take on fermentation at from 55 to 60 degrees Fahr., which cannot be checked. For the preservation of flour, two methods are commonly used, not always effectual. One by spreading it out on granary floors and occasionally, stirring it, or by putting the flour into sacks separated, allowing the free circulation of air around it. The other method is by keeping it in close vessels or hermetically sealed barrels. The most effective means which should always be used with flour to be exported, is by heating it sufficiently to deprive it of one-half its natural amount of moisture. Wheat flour needs to be dried rapidly with a superficial heat on plates whose temperature does not exceed 160 degrees Fahr. The difficulty presented for contrivances of this kind has been a failure to secure equable temperature. One of the best contrivances for this purpose may be described as follows: Five horizontal disks, two meters in diameter, with double bottoms, receive, by means of a worm in the interior, steam heated to the desired temperature by a two-horse power boiler. The condensation is continued by means of the continued return of the water in the generator. The flour is fed in the center of the first disk, whence it is driven to the circumference in a circle by means of a kind of rake with four branches, with inclined eccentric paddles. The flour drops on the second disk, which has a rake, the action of which is reversed, and moves the flour to the center. With this alternately reversed action the flour is moved over each of the five heated disks and is dried evenly and well.

As the gathering and disposition of our crops cannot be altered, our only resource is to expel the moisture, and if this is done by subjecting the meal to a uniform low degree of heat, it is protected sufficiently well, besides all the acid properties will be expelled as well. We throw out these hints to our readers with a view of stimulating such of them as may have an aptitude for invention to go to work and get up a cheap drier which will expel all the moisture without endangering the quality, color or flavor. The presence of moisture in flour and meal has always been a serious detriment to American shippers. It is an acknowledged fact among those conversant with the chemistry of grain, that when subjected to a drying process it has been known to keep in good order for years. The most definite reason that can be given for flour or grain being injured by the presence of water is that there is a considerable change both in the quantity and quality of gluten, which renders it unfit to produce good panification, causes a fungus to appear, which increases the fermentation and sourness, adds to the decomposition and rancidity, and finally makes it totally unfit for use. We believe in the theory that without the presence of moisture nothing in nature would change. The number of barrels of flour which become heated in consequence of the presence of moisture must be large and involve considerable loss to millers and shippers.

When flour is thoroughly freed from the bran it is much more easy to preserve than wheat, or than unbolted meal; thus the more perfectly the flour is dressed,

or the freer it is from branny particles, the easier it is to keep it. It is in the months of May, June and July that flour is most disposed to fermentation. If, on thrusting the hand into a heap of flour, the interior is found to be warmer than the outside of the heap, it requires shifting, or turning. Flour never should be allowed to remain long in sacks. Flour manufactured from old wheat three or four years old, keeps better than that from new, or comparatively new, wheat, and flour having attained the age of a year or thereabouts without detriment from fermentation, will rarely show fermentation afterwards. It can only lose somewhat in quality. A certain Frenchman hermetically sealed some flour in leaden cylinders containing each about three bushels, and placed them in a warm, damp place; at the end of a year they were opened, and the flour presented very satisfactory results. Two of the cylinders contained well bolted flour, which showed no signs whatever of injury. The third cylinder contained unbolted flour, which likewise showed no signs of injury, but had caked somewhat at the bottom of the receptacle without exhibiting the least signs of heat. The fact of the flour caking or massing together was attributed to its having been stored immediately after grinding, which would have infallibly destroyed it, if it had not been hermetically sealed, this latter circumstance protecting it against itself, so to speak. Any process by which we can improve the quality and increase the value of our flour, and at the same time not add to the expense of its manufacture, must be particularly valuable to the people of this country who have millions of barrels of flour which seek a market in the Old World, and come in competition with the great wheat-growing countries of Eastern Europe. The miller and merchant is often more perplexed by the condition than by the quality of wheat from the different sections of the country which they are called upon to grind and handle.

Southern wheat flours generally yield more bread than Northern or Western. A large proportion of water is evaporated from wheat ripening under a hot sun, leaving the farina in a more condensed state, and adding to the quality of the gluten. The flour when made into dough will absorb a greater weight of water than flour from wheat ripened under a Northern sun. American will, on an average, absorb from ten to twelve per cent. more water when made into bread than English wheat yet it has been computed that the loss to Americans from chemical changes in breadstuffs by internal moisture amounts to seven millions of dollars annually. If this loss could be prevented, there would be a saving of hundreds of barrels of flour over the ordinary yield, while the quality would be sufficiently improved to make good the loss in the weight of water extracted, so that it is apparent that the subject of drying not only flour but the meal of all other grains, is a subject well worthy of consideration from all who handle grain and flour.

A new method of storing has been invented recently, which is worthy the attention of shippers. Cylinders of acetate of soda will store four times the quantity of latent heat that the same quantity of steam gives, so that by placing several cylinders containing this acetate in damp granaries, they would soon expel moisture and dry the grain. The cost is trifling.

The practice is growing stronger each year of storing grain in small elevators in small towns, and any method of preservation must therefore be valuable to those who keep any quantity of grain or flour in store. The deterioration of breadstuffs resulting from storage may be reduced to a minimum by various means. The most effective arrangement is probably that of storing the wheat in cast-iron, air-tight receptacles, and to exhaust them by means of exhaust fans. By thus withdrawing the oxygen, all fermentative and fouling action, and the growth of fungus is checked, if not made impossible, and also vermin and insects cannot exist in such evacuated receptacles. When this method cannot be resorted to, the next best way to preserve grain and diminishing deterioration from storage, is by continual turning of the grain and good ventilation with dry air.

[TO BE CONTINUED.]

The receipts of wheat at Minneapolis during October were 7,138,320 bushels, the largest ever received in any previous month. The receipts from Jan. 1 to Nov. 1 were 26,354,160, against 29,322,720 for the entire year of 1884, and nearly equaling the total receipts of Chicago last year. Shipments have greatly increased this year, and at the present rate will exceed those of 1884 by at least 1,000,000 bushels.

LEGAL NOTES.

Common Carrier—Authority to Reship.

Where a common carrier delivers grain to a consignee it may not reship such grain at the instance of a third party unless it has been expressly authorized to do so by the consignee.—*Peoria & Pekin Union Ry. Co. vs. Buckley et al* Illinois Supreme Court, July 13, 1885.

Rights of Consignor of Freight.

A railroad receiving freight from a vendor consigned to the vendee is the agent of the latter, and liable to him only for its safe delivery. The vendor having no further authority over it except the right of stoppage in transitu, it cannot be attached for his debt. The levy of an attachment upon goods in the hands of a railroad for transportation by tacking a copy of the order of attachment upon the goods, and notifying an agent of the road thereof, is insufficient.—*L. & N. Rd. Co. vs. Spaulding*, Superior Court of Kentucky, Sept. 30, 1885.

Railroad Company—Duty to Furnish Cars to Ship Grain.

The statutes of Minnesota require railroad corporations, when within their power to do so, to furnish cars for shipping purposes to any and all persons who may apply therefor. In this case the railroad company designated the elevator of one Sawyer as the exclusive place at which it would receive grain for transportation, and refused to furnish cars to any other warehouseman at this station. Sawyer operated this elevator in his own name and as his own personal business, and not as agent for the railroad company, so that every one depositing grain in the elevator contracted with Sawyer individually, and not with the railroad company. The railroad company, by refusing to furnish cars to any other warehouseman, gave Sawyer a monopoly of the warehouse business at this station. Sawyer also imposed conditions of storage not authorized by law. Held, that this did not constitute a providing of suitable facilities by the railroad company for the storing and handling of grain within the meaning of the statute, and that, therefore, it was required to furnish cars upon reasonable notice, and when able to do so, in which to ship grain out of other warehouses adjacent to its tracks at such station.—*Rhodes vs. Northern Pacific Railroad Company*, Minnesota Supreme Court.

Warehouseman's Receipt—Mixture of Grain—Appropriation.

An elevator company received grain from others for storage; it also bought grain and stored on its own account. The grain was not kept separate, but all mixed together. The company borrowed money from banks, and pledged grain for security, giving warehouse receipts designating where the grain was stored and its grade. This grain was also in mass with that of general depositors of grain. The company became insolvent, and made an assignment for the benefit of creditors, owing the bank at this time \$60,000, for which they held receipts as above stated, pledging grain for security. 1. It was held that the delivery of the warehouse receipt, being a recognized symbol of title, was sufficient to put the pledgee in control and constructive possession of the property, and sufficient for the continuance of the pledge. 2. An owner of goods, if a warehouseman, can pledge the same by issuing and delivering his own warehouse receipt to the pledgee. Under a statute providing that when "grain is delivered for storage to any person, such delivery shall be deemed a bailment and not a sale," even though it be mingled with the grain of other persons, the banks in the above circumstances are "depositors" within the meaning of the statute, and the transaction constitutes a bailment and not a sale, notwithstanding that the grain might be shipped or removed from the warehouse. 3. Hence, if the warehouseman (pledgeor) in the course of his business ships out the specific grain pledged, and purchases and stores in this warehouse other grain of the same kind and quality, the latter takes the place of the former and is appropriated to the contract as the property of the pledgee or depositor.—*Na-*

tional Exchange Bank, etc., vs. Wilder, Supreme Court of Minnesota.

Sale of Machinery.

R. & Co. contracted to sell an engine, boiler, etc., on condition "that the ownership or possession of said engine, etc., does not pass from the said R. & Co. until the notes and interest (given for the property) shall have been paid in full." Vendees took possession, paid only part of the notes, and then sold the property and delivered it to H., who knew vendees had not yet paid for it, and also that R. & Co. claimed title thereto. The court said in sustaining the claim of R. & Co.: "Every person competent to contract is presumed to know that possession alone is not sufficient to confer title against the owner, and if the purchaser relies upon it without inquiry, he does it at his peril. The law construes contracts according to the intention of the parties, and allows them to contract with whomsoever and upon whatever terms they may desire. A man should have a remedy according to his agreement, and should not be held to have trusted where he never intended to trust. The logic of these principles clearly sustains the rights of a conditional vendor against those of the purchaser of his vendee."—*Russell vs. Harkness, Utah Supreme Court.*

ABOUT CORN MIXING.

It is doubtful if the pollen long maintains its vitality in ordinary cases. A ten-acre field was planted with Improved Chester County a few rods on the north; about one-third on the south with an early striped corn, and the middle of the field—the main crop—with Leaming. The striped was used on account of the lateness in planting—about three weeks after the other—as it ripens early. As an experiment, some ears were chosen from adjoining rows on the south, and these when planted next season showed a good deal of mixing; so with some of the earliest and best ears of the Improved Chester County on the north, in the rows next Leaming. These ears were planted by themselves next season, and about half the product showed marked peculiarities of Leaming, and an improvement on Chester County, which usually has too much stalk and too much cob. In the main part of the field—the Leaming—the ears for seed were gathered from the middle before cutting up, and kept carefully by themselves, and in the whole crop next season there was not the slightest evidence of mixing except in the case of one ear. This one ear was distinctly mixed with the striped corn.—*R. J. Black, in Germantown Telegraph.*

THE CROP REPORT.

Col. Dodge, Statistician of the Department of Agriculture at Washington, in his October report says that the indications as to the condition and yield of the wheat crop are essentially the same as those of the previous month, pointing to a final yield of about 350,000,000 bushels, or perhaps a trifle more. The ultimate result, depending greatly on the precise verification of the area harvested, will not probably differ materially from former indications, fluctuating only 12,000,000 bushels, or one-third per cent., from June to October. The winter wheat decline in April and May, from injury and a loss of re-sown area, was 56,000,000 bushels. The estimates of June and July were more favorable, especially in Michigan and Texas. Some heavy yields have been reported from New England, several fields in Caledonia county, Vt., having produced fifty bushels per acre. The central wheat belt suffered most of all, Virginia, West Virginia, Kentucky, and Tennessee averaging only about five bushels per acre, when the normal yield is more than twice as much. The yield in Missouri and a belt of one degree of latitude north of the Ohio, was nearly as bad as that south of the river.

The corn crop has suffered very little from frost, and the yield is slightly above an average. The average condition is the same as the previous month—95, a figure not attained since 1879. As to the average yield, present indications point to fully 26½ bushels per acre throughout the country. Nebraska stands highest and only Wisconsin, Minnesota, Kansas, Virginia, North Carolina, Arkansas, and the Pacific coast fall below 90. Damage by grasshoppers was mainly done in Ohio, Indiana, Illinois, Iowa, and Kansas.

The November corn crop report of the Department of Agriculture at Washington says: The present crop of

corn is the first full average in rate of yield since 1880, which was the last of a series of six full crops of 26 to 28 bushels per acre. The present crop, grown on an area of 53,000,000 to 54,000,000 acres, is slightly above an average for a period of ten years of 26¼ bushels per acre. The highest rate of yield is 36½ bushels in Nebraska and Ohio. The three corn-growing states which produce four-tenths of the entire crop—Illinois, Iowa and Missouri—each average several bushels per acre less than in the census year. Illinois averages 31; Iowa, 32; Missouri, 30. Utah averages 36; Massachusetts, Connecticut and Colorado, 35; New Hampshire and Rhode Island, 34; Michigan, 33; Wisconsin, 32; Kansas, 31. The Southern States make an average yield. The quality of corn is very good in the East and South, medium in the central parts of the West, and somewhat depreciated on the northern border from Michigan to Dakota.

A GRAIN MAN'S CAREER.

Fifteen years ago a raw country boy came West, fresh from one of the most Eastern towns in the United States. Being out of funds after his arrival in Chicago, he worked his way to Sioux City, where he accepted a situation as bookkeeper with H. D. Booge & Co. A few years later he engaged in agricultural business on his own hand, and got on very successfully, when a destructive fire brought him back to hard lines. But he did not flinch, and came soon to the front again. A few years ago he began to erect grain warehouses along the line of the railroads in the neighborhood of Sioux City, Iowa, and he now has under his charge the largest elevator system in the West. He also established a national bank in Sioux City, and beside his manifold occupations he holds the office of vice-president and general manager of the Chicago, St. Paul, Minneapolis & Omaha Road. The name of the man who accomplished this remarkable career is Frank H. Peavey.

PACIFIC ELEVATOR "B."

The Directors of the Chicago Board of Trade have declared the new Pacific Elevator "B" regular for the receipt of grain and flaxseed. This is a new elevator, and has a capacity of 1,000,000 bushels, with all modern improvements for handling and storing grain. Its cost complete, is about \$200,000, and is owned by the Chicago and Pacific Elevator Company, a corporation organized by Mr. William H. Harper some ten or twelve years ago. Mr. Harper at that time built Pacific "A," with a capacity of 750,000 bushels. The cost of the latter was about \$150,000, making a total storage capacity owned by the company of 1,750,000 bushels at a cost of about \$350,000. Mr. Harper was the only stockholder until 1882, when he disposed of a half interest to Colonel Abner Taylor. Mr. Harper is the manager and treasurer of the company, and is to be congratulated on building up so large and growing a business. The Chicago Board of Underwriters yesterday fixed rates of insurance on their "B" at \$1.75 per annum. This rate is much below the average on the elevators in the city. These elevators are used by the Chicago, Milwaukee & St. Paul Railroad system.

A FARMER'S VIEW OF THE MINNESOTA WAREHOUSE LAW.

A correspondent in Stearns county, Minn., writing to the *Farmers' Advocate*, from a farmer's point of view, says that "ever since the railroad and warehouse law was enacted last winter, creating a railroad and warehouse commission for the protection of the producer against the extortion and unjust discrimination of the railroad companies, elevator corporations and the Millers' Association," short statements have appeared in the different papers of the state to the effect that the law was a failure and that the farmers were disgusted with it. These statements, he says, will appear in such places as to convey the impression that they are representing the views of a large class of farmers. Repudiating the insinuation, he expresses a suspicion that these criticisms are sent abroad at the instigation of the above named corporations, the natural enemies of "the only law that has ever been enacted by the legislature for the protection of the producer." The law, he avers, was the outcome of a compromise between the House, where the friends of the farmers predominated, and the Senate, in which the tools of the monopolists had the majority; that it was not all the farmers wanted, but that for the present

they were satisfied with it, if it was carried out justly and properly. But it was not, owing to the appointment of the wrong men by the Governor; so the farmers should see that at the next election men were sent to the legislature who would work in the interest and for the protection of the tiller of the soil.

THE TREASURY ORDER.

The Treasury Department at Washington has issued an order directed to the United States Collector at Duluth, to the effect that cargoes shipped from United States ports, "ostensibly exported to points in Canada in foreign vessels, but really shipped from one port in the United States to another by a route, part water and part rail, through Canadian ports, are not bona fide exports," and shall not henceforth be granted certificates of free entry into the port of arrival. This order is intended to exclude Canadian vessels from the transit trade of the United States, and shipments from Duluth which are bound for New York, Boston, or other American ports East, a large proportion of which have been going via Collingwood or Sarnia on the Grand Trunk, will, no doubt, go via Buffalo and roads centering there for the future.



Messrs. Zinn & Kayser, 63 Prince street, New York City, have placed a number of their American Automatic Scale Registers in the flour mills at Minneapolis.

The Main Belting Company, manufacturers of the Leviathan belting, 248 Randolph street, Chicago, find business decidedly on the increase and generally improved in every way.

Fitzsimmons & Connel have ordered a link-belt elevator to serve as a dock lift to unload the sand and crushed stone to fill the caisson for the foundation of the Lake street bridge. The Link-Belt Machinery Company have also lately shipped two Cockerell wheat scourers to London, Eng., and four to Hamburg, Germany.

The copper and iron work for the Rialto building, including iron trusses for the skylight, cast-iron conductor pipes, etc., is being done by Knisely & Miller, of this city. This firm is also remodeling the skylight of the Michigan Southern depot, and has recently completed a contract for work for the Joliet Steel Company, Joliet, Ill. Among the contracts lately completed by the firm was one for putting a corrugated iron roof on the Chicago & Pacific Elevator, city.

Says a Portland paper: "We visited the extensive establishment of Twitchell, Champlin & Co. a few days since and witnessed a corn-husker in operation. It is a small affair about the size of an ordinary job printing press. The work is done with speed, a bushel and a half of ears being husked in one minute and ten seconds. It requires the labor of two boys or girls to keep one running. That is, two small boys will do the work of twenty-five experts at the hand husking process. This machine is manufactured by the Maine Corn Husking Machine Co., of which Richard O. Conant, a well-known merchant of Portland, is president."

The question of infringement of the Caldwell patents on spiral conveyors, which has been in dispute for the past three years between Wm. B. Scaife & Sons, of Pittsburgh, and the Webster & Comstock Mfg. Co., of Chicago, has been adjudicated and settled without resort to law. The Webster & Comstock Mfg. Co. have made arrangements with Wm. B. Scaife & Sons, who now hold all the patents in dispute, to manufacture conveyors combining the most improved devices. By the terms of settlement, parties who have purchased conveyors from the Webster & Comstock Mfg. Co. are protected against any damages for infringement of the Caldwell patents.

Corn shippers complain that the railroads are discriminating against Chicago in the matter of giving lower rates from Mississippi and Missouri River points to the seaboard. The Freight Bureau have the matter under consideration, and we hope to hear from them soon.

General Items.

The buckwheat crop this year is reported unusually large, and prices consequently have gone down.

Corn is the worst used of all cereals. No matter how fruitful it is, it is only grown to have its ears pulled.—*Newark Register.*

Flax raising has become one of the leading industries in Minnesota, 126,845 acres having been devoted to this purpose last year.

During the month of October eighty-seven car loads of flax were shipped from the little station of Ashton in Osceola county, Iowa.

Imports of Canada barley have recently been very heavy at Milwaukee. Within three weeks one brewing company received 150,000 bushels.

The Chicago, Milwaukee & St. Paul Railroad is said to be carrying over three-fourths of all the grain taken from Southern Minnesota this fall.

Latest estimates on India's exportable surplus of wheat place it at 50,000,000 bushels. Arrangements have already been made to ship 100,000 tons.

The heaviest yield of oats ever known in Pennsylvania, eighty-one and one-half bushels to the acre, was secured by a Chester county farmer this season.

The Wabash Elevator Company at Toledo, Ohio, has materially reduced the winter storage rate, which will be only two cents per bushel from Nov. 1 to May 5.

The oat crop of the United States this season is estimated at 600,000,000 bushels, the largest ever grown, and the average yield is about twenty-seven bushels per acre.

East-bound railroads will advance rates five cents Nov. 23, on the basis of twenty-five cents per 100 pounds for flour and grain, and thirty cents for provisions to New York.

The export of wheat from India since Jan. 1, 1885, to Oct. 1 has been about 32,500,000 bushels, an increase of some 11,500,090 bushels over the corresponding time of last year.

The Russian thistle, brought to this country by the Mennonites in their first importation of seed wheat, is becoming so thickly spread in parts of Dakota as to cause serious alarm.

Governor Pierce, of Dakota, is reported to have estimated the wheat crop of that territory at 38,000,000 bushels, instead of 25,000,000 bushels, reported by the Government Agricultural Bureau.

Exports of wheat and wheat in flour from all American ports from Sept. 1 to Oct. 24 were 10,599,000 bushels, against 22,656,000 bushels for same time last year; corn, 7,200,000 bushels, against 3,010,000 last year.

The flaxseed crop of this country increases rapidly every year. Large quantities are being forwarded East this season, and flaxseed, no doubt, will hereafter figure largely in our carrying trade by lake and canal.

Hon. George H. Barnes, President of the Northern Pacific Elevator System, has given notice that he will donate \$50,000 toward founding a Congregational College at Fargo, to be called the Barnes University.

Stocks of old corn at all principal points are light, and the weather too moist for new to grade for some time to come. Bulls say that should the present demand for shipment continue, year will sell to November prices.

A starch manufacturer in New York is said to own all the corn there, besides options for a large amount. Who owns the small stock of corn here is a conundrum. There is not enough, however, to bother any of the corn kings.

Mr. Isaac T. Rhea, a prominent grain merchant of Nashville, Tenn., advocates the growing of the small cob corn in that part of the country instead of the large cob corn, as from his experience and observation he found that the small cob stands the drouth much better

than the large variety, which is often injured by the dry weather prevailing there at the time of development of the corn.

Iowa, Illinois, Missouri, Kansas, in the order named are the great corn states this year. The increase of the crop over that of last year is put at from 6,000,000 to 8,000,000 bushels in Missouri and at 10,000,000 bushels in Kansas.

The total wheat production of Michigan this season is now estimated at 31,000,000 bushels, the average yield being twenty bushels per acre. Oats yielded thirty-five bushels per acre, and barley a little less than twenty-five and one-half bushels.

C. S. Hulbert, formerly of the Pillsbury Elevator Company, has purchased a lot, 96x250 feet, on Park avenue, between Twenty-sixth and Twenty-seventh streets, Minneapolis, for \$7,000. Mr. Hulbert will proceed to erect thereon a handsome residence upon his return from Europe.

The Buffalo *Courier* laments the falling off in the grain trade at that port, as resulting chiefly from excessive elevator charges. Grain shipments by canal from Buffalo thus far this season have been 28,135,010 bushels, against 33,535,518 bushels in 1884—a loss of 5,400,508 bushels.

A magnificent yield of corn is reported from Central Illinois. A. D. Skinner, residing near Tolono, Ill., husked corn yielding 90 bushels per acre, and a stalk from the field of Joseph Condie in the same vicinity measured twenty feet. Fifty to 55 ears make a bushel of 75 pounds, sometimes not more than 45 being required.

Winter storage rates in Chicago elevators go into effect Nov. 15. On elevator receipts of that date and later storage will be charged at the rate of 1½ cents per bushel for the first ten days, and one-half cent for every succeeding ten days or part thereof until four cents storage has accumulated; after that no further storage will be charged until April 15.

The wheat business of Oregon this season is reported very brisk and the largest ever known in the history of the state. The principal market is Liverpool, Eng., and the shipments are made by San Francisco and the Cape Horn. Besides Oregon is called upon to supply the local markets of California, owing to the failure of the wheat crop in that state.

Receipts of grain here for October aggregated 21,137 cars, including 417 cars winter and 4,642 cars spring wheat, 8,821 cars corn, 3,952 cars oats, 523 cars rye, and 2,781 cars barley. Compared with the same time last year, there is a decrease of 1,167 cars winter wheat, 3,471 cars spring wheat, 656 cars oats, 476 cars rye, but an increase of 1,582 cars corn and 728 cars barley.

An experiment with White Russian and Welcome oats at New York Experiment Station, the past season, resulted in a yield at the rate of upward of eighty-two bushels of the former to but little more than fifty bushels of the Welcome. The above result was on plats specially prepared. In field culture White Russian yielded 60½ bushels per acre, and Welcome 4½ bushels.

A Barber County (Kan.) farmer, who planted the yellow devil variety and the McGinnis variety of corn on June 15 and 12 respectively, found that his crop was very little worm-eaten. He ascribes this phenomenon to the fact that these varieties mature very rapidly, and while the worms were figuring on a good place to start in, the corn had got so hard that they could not bite it.

Oliver Counter, residing near Tacoma, Wash. Ter., has raised this year some seven-headed wheat, the stalks of which are six feet high. The heads, resembling a pine cone, were thick and clumpy, and the number of grains shelled from an average head was 181. The yield per acre of this wheat was 85 bushels. One of the heads that was weighed tipped the scales at over half an ounce.

Hardly half a century has passed since the first bag was turned out in New York in a sailmaker's loft near the Battery. The man who first made a business of bag-making carries on business yet at the old stand, and his is one of the two New York houses that have refused to join the loan pool, and continue to do business independently. The exportation of American grain that grew up suddenly, and the sewing machine gave an enormous impetus to the business. Machines that turn out a hundred bags an hour, sewn and finished, have replaced the slow and laborious work of hand-sewing of the early days. Now over a hundred kinds of sacks are made,

from the coarsest gunny bag for cocoanuts and cotton seed to the nobby shatuckett corn bag that makes serviceable every day wear for Brazilian planters at the end of his journey.

The St. Louis elevator men held a meeting on Oct. 28, to discuss the reduction of elevator rates by Nov. 15, so as to secure a larger proportion of the corn crop for the St. Louis market than last season. As to the proposition of some receivers to make a charge of one-half cent a bushel for transfer of grain passing through the city, no conclusion was arrived at, as it was thought the trade could not stand a greater tax.

Assistant General Manager Odell, of the Northern Pacific, who recently made a trip over the Minnesota and Dakota divisions of the line, noticed that the farmers, having plenty of money on hand, were disposed to hold their wheat for better prices. The elevators along the line were not overcrowded, and by removing 10 per cent. of their contents, sufficient storage room would be provided for all the wheat which is likely to be marketed along the line this fall.

In accordance with a resolution passed at a recent meeting of the board of directors of the Chamber of Commerce, and sent to General Manager Miller, of the Chicago, Milwaukee & St. Paul Railway, the date of the winter storage season of wheat in Milwaukee has been fixed between Nov. 15 and April 15, instead of beginning Nov. 20, as formerly. The object of the change is to have the winter storage season in Milwaukee uniform in extent with that of Chicago.

Experiments made by a Frenchman on the depth for planting wheat have given the following results: In a seven-inch bed only five grains out of 150 germinated; producing 53 heads with 682 grains. At 3¾ inches deep 93 grains sprouted, with 992 heads and 18,534 grains. At 1¾ inches 142 grains germinated, growing 1,660 heads with 35,816 grains. At 1½ inches 64 grains sprouted, yielding 529 heads and 15,587 grains. On the surface only 20 grains germinated, producing 1,600 grains.

According to the official stock report taken by the San Francisco Produce Exchange, the quantity of wheat in California on Oct. 10 was 705,000 short tons, including 28,000 tons of Oregon wheat, received at San Francisco between July 1 and Oct. 10, and the wheat reduced to flour. Of this supply on hand, 200,000 tons will be required for consumption and seed. Exports to China and Central America are put at 70,000 tons, and 40,000 tons are set down for carrying over to next year. This would leave 395,000 tons available for export to Europe.

The amount of grain on passage to Europe on the 31st ult. was as follows: Wheat, 14,080,000 bushels; corn, 1,960,000 bushels; against 13,360,000 bushels wheat and 2,130,000 bushels corn during the previous week. The visible supply of wheat in the United States and Canada, on the 31st ult. was 46,756,859 bushels. The amount on passage for the continent of Europe on that date was 1,680,000 bushels, and for Great Britain 12,400,000 bushels, making the total in sight and afloat for Europe 60,336,859 bushels, against 59,023,616 bushels the week previous, 51,301,538 bushels the corresponding period last year, 48,631,508 bushels in 1883, 37,502,853 bushels in 1882, 47,477,000 bushels in 1881, and 42,918,000 in 1880.

The *Miller* reports the world's reserve stocks carried over last June at 11,500,000 quarters. There will be no scarcity of wheat, but before the end of the cereal year the best authorities are agreed that there must be a material elevation of values. The probable requirements of the world, according to the *Miller*, will be 239,000,000 bushels, and the probable exports 213,000,000. By Beerbohm the figures are 280,000,000 and 203,000,000. But as the United States, Russia, and India have surplus reserves of 36,000,000 bushels, the *Miller's* deficiency is more than made up. In all other countries the reserves are said to amount to about 48,000,000; so that the total reserve is 48,000,000, or 12,000,000 bushels above Beerbohm's reported deficiency.—*Baltimore Journal of Commerce.*

THE CHICAGO MAN'S LAST REQUEST.

"My dear sir, I am sorry to inform you that you cannot live more than a few hours."

"Is that so, doctor? Please call a district telegraph boy."

"To send for a minister?"

"No; I want to get the latest quotation on wheat."

ELEVATOR AND GRAIN NEWS

A large elevator is being built at Arlington, Dak.
A distillery will shortly be built near Bonanza, Mo.
Three elevators are being built at Grand Rapids, Dak.
The elevator at Stanton, Neb., is now in running order.

Burke & Simmons, grain dealers, Walnut, Ill., have assigned.

John R. Merrill, grain dealer, Grand Mound, Iowa, has assigned.

The grain houses at Miller, Dak., have a capacity of 110,000 bushels.

A new 30,000-bushel elevator has just been completed at Gibbon, Minn.

J. W. Hanes, grain dealer, Enon, Ill., is making room for the new corn.

Charles Kudat, grain and stock buyer, of Norfolk, Neb., has sold out.

The receipts of grain at Glencoe, Minn., are averaging 4,000 bushels per day.

Sioux Falls (Dak.) papers are urging the establishment of a flax mill in that town.

Waldron & Walker succeed R. Waldron in the grain business at Jackson, Mich.

The American Glucose Co. have purchased the Blair elevator at Concordia, Kan.

Hodges & Hyde and Cargill Bros. have closed their elevators at Flandreau, Dak.

A new pier and warehouse are to replace the present warehouses and docks at Duluth, Minn.

Waite & Son, of St. Cloud, Minn., are building a \$50,000 elevator at their "Cold Spring Mill."

P. Cramer hauled 850 bushels of corn as the yield of six acres on his farm near Marshfield, Wis.

The free bridge at Stillwater, Minn., is drawing a great deal of Wisconsin wheat to that place.

The Wabasha Roller Mill Company is erecting a large grain warehouse at Bright's Crossing, Minn.

The Sperry Fanning Mill Company, of Dodge Center, Minn., are about moving to Owatonna, Minn.

The bucket shop of F. Friedman, at New York City, N. Y., has suspended, with \$33,500 liabilities.

The new elevator of the Chicago & Northwestern Road at Winona, Minn., is now in running order.

The firm of Hill & Finch, grain dealers, Nashville Tenn., has been dissolved by the retiring of Hill.

The Farmers' Alliance of Elbow Lake, Minn., are about building a shipping house at Herman, Minn.

The celebrated Dalrymple bonanza farm, in North Dakota, produced 210,000 bushels of wheat this year.

The new elevator at Waterville, Kan., is progressing finely. It will have a capacity of about 50,000 bushels.

Dodd & Melick, grain dealers, of Gladbrook, Iowa, have dissolved, and are succeeded by Walters & Dodd.

Jas. I. Pritchett & Co., grain and feed dealers, Danville, Va., have dissolved. James I. Pritchett succeeds.

Peter I. Johnson has rented the Luce warehouse, at Red Wing, Minn., and will engage in the grain business.

The acreage of wheat sown in Hancock county, Ohio, this fall is the largest ever known in the history of that county.

John Long has retired from the firm of Hussey & Co., grain brokers, Carrollton, Ill. J. P. Morrow has been admitted.

Several grain elevators are in course of construction along the line of the new James River Valley Railroad, in Dakota.

Thomas & Benham, flour and grain commission merchants of New York City, have dissolved; J. H. Benham continues.

Williams & Bidwell, grain and stock dealers, at Cambridge and Collins, Iowa, have dissolved. W. L. Williams succeeds.

W. L. Simmons, grain dealer at Sandwich, Ill., has failed for \$40,000. The assets were valued at from \$20,000 to \$30,000.

Buffalo (N. Y.) elevators are said to be blocked up with wheat, and there is talk of erecting two or three more elevators.

The ring wheat buyers at Delavan, Minn., paying two cents more than the regular market price, have run out the Independent.

J. P. Wilson is putting up a feed mill at East St. Cloud, Minn., which he will run in connection with his new grain house.

The Northern Pacific Elevator Company, at Minneapolis, Minn., filed amendments to their articles of incorporation on Oct. 15.

Oliver Dalrymple, the bonanza Dakota farmer, says that he will put in 30,000 acres of wheat this year, of which 15,000 acres have been sown this fall, with the

variety known as "Scotch Fife," and he anticipates that the acreage of Minnesota and Dakota will be about the same as last year.

The wheat around Palmyra, Wis., when unstacked for threshing, has been found to be largely mildewed and not worth threshing.

Held & Werner, coal, grain, and lumber dealers, Fogelsville, Pa., have dissolved, and are succeeded by Allen S. Werner & Co.

The Schlitz Brewing Co., Milwaukee, Wis., have broken ground for the erection of a 400,000-bushel elevator near their brewery.

Allen Delp, grain commission merchant of Indianapolis, Ind., has admitted Chas. Groff to partnership. The firm name is Delp & Groff.

The Minnesota & Northwestern and Illinois Central have issued a grain tariff quoting through rates from Minnesota points to Chicago.

The Wheat Association of Fergus Falls, Minn., are about to build a grain warehouse at that place. F. U. Burnham & Co. have the contract.

The first large shipment ever made from Stanton, Minn., amounting to about 1,000 bushels, was put on board the steamer Undine on Oct. 12.

Isaac Hawthorne, a farmer living near Miller, Dak., has built a granary with a capacity of 4,000 bushels, and will hold his grain instead of selling it.

J. M. Dungan, a grain merchant of Brimfield, Ill., who broke his leg one year ago, has thrown away his crutches and now walks with the aid of two canes.

Smith, Hippen & Co., of Peoria, Ill., are rebuilding their elevator. The new one will have an increased capacity of 3,000 bushels over the old one.

The new elevator at Jordan, Minn., is about completed. The building is 110 feet long, 37 feet wide, 108 feet high, and will have a capacity of 100,000 bushels.

The big grain firm of E. T. Trickle & Co., of Rantoul, Ill., has already contracted for over 20,000 bushels of new corn, ranging from 25 to 30 cents a bushel.

The Gulf, Colorado & Santa Fe R. R. are reported as going to build an elevator, wharves, etc., at a cost of \$500,000, as soon as permission can be obtained.

The business men of Pipestone, Minn., have put a grain buyer on the streets. The first day the price rose from ninety-seven cents to one dollar per bushel.

Edward S. Richards, Louis A. Lepan, and Edwin Winn have incorporated as the Chicago Hopper Scale Grain Transfer Company, with a capital stock of \$75,000.

There are 5,000,000 bushels of grain now in long storage in the elevators at Buffalo, N. Y. The C. J. Wells Elevator is to have a large addition built this winter.

It is estimated that 1,500,000 bushels of wheat from the new crop have already been taken from the country tributary to the Milwaukee division west of Milbank, Dak.

J. F. Cummins, the bonanza farmer of Union county, Dak., raised 1,275 bushels of corn from a patch of less than fourteen acres, an average of over 91 bushels to the acre.

The Minneapolis & Northern Elevator Company will at once put up fourteen new warehouses at points north of Fergus Falls, Minn., with a capacity of 35,000 bushels each.

The citizens of Sioux Falls, Minn., have secured almost the entire grain market of that section by placing an independent buyer in the field who will not enter the pool.

Leading business men of Jordan, Minn., have formed an association for the purpose of buying wheat; and they will at once build an elevator at the above named place.

A wheat fight has been on for some time past at Glenwood, Minn., and the Sawyer elevators, at Starbuck and Villard, Minn., consequently have run up prices on local buyers.

The chimney of the new elevator now being built at Washburn, Wis., will be 200 feet high and constructed of pressed brick, manufactured by John R. Prince & Co., of Ashland, Wis.

It is said that about 5,000 bushels of the poorest grades of wheat were dumped on to the Minneapolis Millers' Association at Plato, Minn., when their agents were paying 84 cents there.

A fire-proof elevator is being constructed by the Wakefield Milling Company, at Wakefield, Neb., 34x40 feet. When completed it will have a capacity of 12,000 bushels of grain and 150,000 pounds of flour.

Last year there were nearly 700,000 bushels of wheat marketed at Groton, while this year the estimate is placed at a round million. It is no uncommon thing there to see 25,000 bushels produced from one farm.

A suit brought by Teichmann & Co., of St. Louis, against Otto Sontag, a grain operator of Winona, Minn., to recover overdrafts on barley deals in 1881 and 1882, resulted in a verdict for plaintiff for \$9,628.03.

Toledo parties are contemplating the erection of an elevator near Adrian, Mich., situated at the head of Devil's Lake, and it is expected that the building will be completed in time to receive part of this year's crop.

The merchants of Flandreau, Dak., have purchased a warehouse, and are buying independently on the elevators, claiming that much of the grain that should go to Flandreau has been marketed at points on the Chicago & Northwestern Road because higher prices were paid

there than were paid by the Flandreau elevators. The result, it is said, has been that the elevators got very little grain since, as they refused to pay the local price.

The Southwestern Elevator Co. has been incorporated at Chicago, Ill., with a capital stock of \$500,000. The incorporators are George L. Dunlap, Columbus R. Cummings and John N. Jewett.

About 177,000 bushels of No. 2 red winter wheat in the Commercial wharf and Erie basin store, New York City, was posted "out of condition" on the New York Produce Exchange on Oct. 16.

Nearly 3,000,000 bushels of grain have been received this year at Oswego, N. Y., since the opening of navigation. About 200,000 bushels more of barley were received in October than during the same month last year.

The Minneapolis elevators are becoming too small to accommodate their growing business. Consequently additions will be built to the Central and elevators B and C, providing room for another million bushels of wheat.

Assistant General Manager Odell, of the Northern Pacific, has promised to stop the complaint of discrimination at Lisbon, Dak., by furnishing cars to the elevators and warehouses there in proportion to their needs and capacity.

The Canadian Pacific Railroad has fixed its grain rates for the season at fifty cents for 100 pounds from Winnipeg to Montreal and all points East. A special rate of forty-two cents has been made for frosted wheat between the same points.

The Canadian Pacific Railway are erecting an elevator and granary at Montreal, Can., to receive the cereals that come over the road from Winnipeg and the West to Montreal; it is expected to be ready for work in a couple of weeks.

Stanbro & Watkins, commission merchants on the Chicago Board of Trade, suspended Nov. 9, with \$10,000 liabilities. They had been in business for four years. Being short on corn, they were unable to stand the recent advance.

The elevator men of Atchison, Kan., claim that the Missouri Pacific Railroad is discriminating in favor of Leavenworth, Kan., at the rate of from two to four cents a bushel, and intend calling the attention of the railroad commissioners to the matter.

Hon. H. L. Gordon and Dr. A. H. Hedderly, of Minneapolis, Minn., contemplate building a 1,000,000-bushel elevator in that city on land owned by Dr. Hedderly, between the Minneapolis & St. Louis tracks. It will cost about \$150,000.

The Winona Elevator Company commenced operations on their new elevator at Winona, Minn., Nov. 1. The dimensions of the building are 120x80 feet; height, 110 feet; depth of bins, 48 feet. Its capacity is 300,000 bushels, and its cost was \$100,000.

The Winona (Minn.) Elevator Company has been incorporated by H. J. O'Neill, W. M. Shepard, John D. Jones, of Winona, and Albert Harrington, F. C. Van Dusen, of Rochester, with H. J. O'Neill as president; Albert Harrington, vice-president, and W. M. Shepard, secretary and treasurer.

The Illinois River Elevator, at Chicago, Ill., which was built two years before the great fire, has been purchased by Messrs. Norton & Co. and Edmund Norton. It was formerly used for the reception of corn from the canal, but for the last two years it has been occupied by wheat. The capacity is 175,000 bushels.

Before the civil war cotton was the most important agricultural product of this country. But within the last few years it has been outgrown by wheat, and still more so by corn. Last year the value of our cotton crop was about \$225,000,000, while the wheat crop was valued at \$330,000,000, and that of the corn crop at \$640,000,000.

A large grain elevator of 200,000 bushels' capacity is being built in Fort Worth, Tex. The wheat production of the territory tributary to that place being from 1,500,000 to 2,000,000 bushels, the want of an elevator for handling this immense crop has been felt most keenly by the business men of Fort Worth as well as by the farmers.

Henry L. Bacon, who swindled farmers of Eastern Ohio and Western Pennsylvania on Bohemian oats, pleaded guilty to the charge of forgery at Akron, Ohio, Oct. 30, and was sentenced to seven years in the penitentiary. About two months ago he sold \$1,000 worth of notes, to which the signatures of various farmers had been forged.

Mr. Geo. McMahon, who is in charge of the elevator at St. Cloud, Minn., says that he has not received yet No. 1 hard wheat from the last crop, it being nearly all No. 1 Northern. The receipts, however, from the vicinity of St. Cloud have thus far been small, only from 300 to 500 bushels a day, as the farmers are holding their grain for better prices.

Scott county (Minn.) *Argus*: The only way to fight the millers' monopoly at present is for the farmers and the merchants and business men of every town in the whole Northwest to organize a co-operative wheat-buying association. They can then get for their wheat what it is worth in the world's market, and they cannot get it otherwise. We suggest that a representative meeting of Northwestern merchants be called to meet at an early date at some convenient place, for the purpose of discussing the feasibility of some such united action.

The electric light is being put into the Union Elevator at St. Louis.

Bartholomae & Roesing are building a \$12,000 brick elevator at Chicago, Ill.

The Bismarck, Dak., elevator has been leased by the Mandan, Dak., Roller Mill Co.

A brewery, with a storage capacity of 25,000 barrels, is being built at Bloomer, Wis.

Daylor & Ennor, grain dealers, Britt, Iowa, have dissolved. Thos. Daylor continues.

Howard & Alexander succeed W. H. Howard, grain dealer, of Jewell Junction, Iowa.

The Minneapolis & Northern Elevator Co. is building a 35,000-bushel house at Lakota, Dak.

The *Globe-Democrat* says that stock of the St. Louis elevator is selling at improved prices.

The receipts of wheat and flax at Ellendale, Dak., for the year are estimated at 600,000 bushels.

An addition capable of holding 150,000 bushels is being built to the Merchants' Elevator at St. Louis.

Hot air pipes have been placed in Elevator "F," at Duluth, to prevent damage to the grain, arising from the fact that the elevator had been rapidly built from green lumber.

Operators of elevator lines in the northern sections of Minnesota and Dakota report increasing receipts; in more southern portions they continue light. All the large elevator companies which can command sufficient capital are inclined to hold their wheat in their own storage instead of running it into the elevators at Minneapolis, Duluth, and other terminal points.

The Farmers' Alliance of Meeker Co., Minn., are about to build a flat warehouse at Litchfield, with a capacity of 10,000 bushels. This is an experiment to test whether farmers can not, by shipping their own grain, make from \$10 to \$20 per carload. The stock will be taken by many farmers in small amounts. If it should prove successful other elevators will be built at stations in the county.

The McLeod county (Minn.) Farmers' Alliance have passed resolutions expressing the utmost confidence in the honesty and ability of the Railroad and Warehouse Commissioners, and believe that they are working for the best interests of the farmers. And, furthermore, that the laws under which the commission exists are worthy of a fair trial, and should be perpetuated with such improvements as experience may dictate.

Chas. Kaestner & Co., Chicago, Ill., have recently made the following sales: A. H. Olmsted, Genoa, Ill., one 30-horse power automatic engine and boiler complete, two 24-inch Kaestner Mills, bolting chest, three stands of elevators, shafting, pulleys, etc.; H. D. McCulloch, Tallahassee, Fla., one 60-inch Kaestner Corn Meal Mill; J. A. Lagerstrom, Delphi, Minn., 16-inch mill; W. H. Taylor, Tamalea, Ill., one Western Mill Sheller and Cleaner.

The following are some of the recent sales for elevator steam plants made by the Morse Engineering Co., Kansas City, Mo.: M. C. Vaughan, Belleville, Kan.; W. S. Broughton, Idona, Kan.; G. C. Miller, Clifton, Kan.; H. D. Shepard, Burlingame, Kan.; Armourdale Elevator Co., Armourdale, Kan.; E. E. Clark, Delphos, Kan.; Greenleaf & Baker, Warwick, Kan.; O. J. Martin, Goddard, Kan.; M. Salt, Barnes, Kan.; A. A. Young, Greenleaf, Kan.; M. Eichelberger, Belleville, Kan.; Smith & Craig, Concordia, Kan.; A. C. Lee, Kansas City, Kan.

The Dakota *Pioneer*, of Aberdeen, Dak., says: "The time has been, if not just at present, when Ellendale and Columbia were paying from 5 to 8 cents per bushel more for wheat than was paid for the same grade at Aberdeen. One of two things exist: If Ellendale can pay 8 cents per bushel more than Aberdeen, the Milwaukee road is discriminating against Aberdeen in freight rates, or the wheat buyers of Aberdeen are making a profit of 8 cents per bushel more than the Ellendale buyers. In either case Aberdeen is being wronged and the question arises: Who are the guilty parties?"

The Litchfield, Minn., *News Ledger* says: "At a meeting of the Farmers' Alliance of Meeker county, held in this city on Saturday, Oct. 24, the farmers took a bold and decided step toward testing how much they are being wronged by those who have in the past handled their wheat. The scheme adopted by them is to build what is denominated a "flat warehouse," capable of storing 6,000 to 8,000 bushels of wheat, for the accommodation of such farmers as desire to make personal shipments of wheat. As we understand it, the house will be divided up in carload bins, and the farmer wishing to make a shipment secures a bin for a certain length of time and then proceeds to get in his wheat. As soon as he has obtained his car and made his shipment the next one takes the bin, and so on. The legislation obtained last winter and the decision made by the state warehouse commissioners relative to transit rates, have made such a mode of procedure possible, and now the farmers of Meeker county will have an equal chance with the handlers of wheat and can sell his wheat on sample, wherever he can find a satisfactory purchaser. It will take but a short time, in this way, to satisfy the farmer as to whether he has been fairly dealt with or not. The building is to be built by shares of stock, to be taken by the farmers, and the shares are fixed at \$5 each in order to get as many farmers interested as possible. When ready for use they will find that they will have to secure the services of a superintendent, and from whence they propose to derive his salary we have not been informed, but suppose a fee will be charged for the use of the bins. If

the plan works satisfactorily at this point it is the intention to erect similar buildings at other places in the county. As soon as sufficient stock is taken the building will be built, and the indications are that the necessary amount will be easily raised."

ITEMS FROM ABROAD

The government of Holland is about presenting a bill to Parliament to raise the import duty on corn.

The people of Southern France use very little of the higher grades of white wheat and flour. But what is used is supplied by the white wheat of Grovence and Algeria.

The Russian harvest of 1885 is above the average for winter wheat, but below for spring wheat. The deficiency in spring wheat is due to drouth. Rye is slightly above the average. The oats crop is bad. Other cereals are below the average. Hay and fruit are inferior. There is a total wheat production of 6,000,000 quarters, which is 20 per cent. under the average.

The agricultural statistics of New Zealand for the year ending with March, 1885, show that the area under wheat fell off by 107,663 acres—from 377,706 acres to 270,043 acres, as compared with the area in 1884. Yet the yield is very high in New Zealand, twenty-six bushels per acre in 1884 and twenty-five and a quarter bushels in 1885. Oats, on the other hand, increased in area from 262,954 to 354,794 acres, and barley from 32,907 to 39,703 acres.

A large part of the dullness in the export department of our wheat market is due to the existence of a French duty on imports into that country. It is pretty well understood by the trade that France will require to take in a considerable quantity of wheat or flour before her next harvest, as her home supply this year is 20,000,000 to 30,000,000 bushels less than that of the twelve months immediately preceding. But her home crop will probably be well used up before a bushel of foreign wheat is purchased, as the price will have to rise to some eighteen cents above that in London to permit buying from abroad without loss. Recent quotations indicate that fully half of that difference has already been conceded by purchasers in Paris, and it may be roughly estimated that the other half will have been granted within another three months. The French will then begin to buy abroad, and may be expected to do it in a hurry, as that is the method usually pursued by them when they decide to take hold. They remind one of the Texan who remarked to a friend: "You may carry a revolver for twenty years and never want it, but when you do want it you want it like fury." Previous to the imposition of the duty they were in the habit of buying in our markets soon after harvest a large part of the estimated deficiency at home; the whole business being consummated within a few days, and often inside a few hours. Unless they have changed their methods the process is simply deferred a few months this year.

BARLEY ON THE PACIFIC COAST.

The amount of barley reported on hand in California, Oct. 10, was 1,620,500 centals, or 81,000 tons, which allows a consumption of about 200,000 centals per month until next harvest. Over 80,000 centals had been received so far from Oregon, Utah and Nevada, and it is estimated that about 200,000 centals more may come in from the same sections during the rest of the season. Allowing 200,000 centals for carrying over, 175,000 centals per month will be left for consumption, even if there should be no further receipts from outside quarters, this being a little more than the monthly consumption of 1883. The largest consumption, 243,000 centals per month, was in 1884, while during the first six months of 1885 it amounted to 200,000 centals per month. At this rate there would be just about enough barley on hand for the state's requirements, while at the largest rate, as shown above, with no outside receipts, there would be a shortage of over 300,000 centals.

NORTHERN LIMIT OF CORN GROWTH.

On the northeast shores of Asia corn cannot be cultivated at 50° north latitude, although in the interior it matures as far north as 62°. On the eastern shores of America the northern limit of its growth is 50°, and on the western shores it reaches about 57°, while in the intermediate country it is known to grow as far as 65°. The fact that it thrives further north in the interior of continents than on the shores is thought by M. Buysman to be due not alone to the cooling influences of the ice accumulations on the coast, but to depend largely on the greater amount of sunlight received in the dry regions far from the oceans. In Norway corn grows in latitude 70°, the climate being not only warmed by close proximity to the gulf stream, but the skies being very clear as well. Even in the most northern regions, where the shade temperature is very low, vegetation may grow in sheltered spots, exposed to the sun, and luxuriant scurvy grass has been found on Walden Island, beyond 80° north latitude.—*London News*

Fires, Casualties, Etc.

A. C. Nash, proprietor of an elevator at Lanesboro, Minn., is dead.

Fire destroyed an elevator at Derby, Ohio, Nov. 6, together with a large quantity of grain.

Fred Melchert, of the firm of Melchert, Granger & Co., grain dealers, Davenport, Iowa, is dead.

G. N. Walker, Sr., of the grain commission firm of G. N. Walker & Co., Peoria, Ill., died recently.

Mr. Coffin, of the firm of Coffin, Magee & Co., millers and grain dealers, at Watertown, Mass., is dead.

A two-year-old child of Rev. Mr. Sherborn was smothered to death in an oat bin at Grundy Center, Iowa.

A prairie fire at Odell, Dak., destroyed a granary containing 15,000 bushels of wheat, belonging to V. V. Townley.

James Kimler's elevator, at Le Roy, Ill., was burned Oct. 24, with 3,000 bushels of oats. Loss, \$7,000; insurance, \$3,000.

An elevator at Mankato, Minn., containing 150,000 bushels of flax, collapsed Nov. 6, spreading the contents over the ground.

The large grain elevator at Altona, Iowa, belonging to James N. Porter, was destroyed by fire, with most of its contents, on Oct. 14.

The elevator of the Minnesota and Dakota Elevator Company, at Howard Lake, Dak., has been burned, with 18,000 bushels of wheat.

Alden & Waters' elevator at Pingree, Dak., was burned Nov. 9. The loss was fully covered by insurance. The origin of the fire was not ascertained.

E. A. Warneke's grain elevator and warehouse at Odebolt, Sac County, Iowa, was destroyed by fire Nov. 5. The loss was \$5,000; partially insured.

A man named John Beard was recently caught in the shafting in a large elevator at Plackinton, Dak. His clothing was nearly all torn from his body, but he escaped with but slight injuries.

The destructive fire which swept over the town of Brookfield, Mo., Oct. 24, caused a loss to the Goldman Grain Company of \$10,000, insured for \$6,000; also a loss of \$6,000 to the elevator of B. J. Bettelheim; insured for \$3,800.

Emmett Kent, an extensive dealer in grain and lumber, at Clinton, Ill., has been declared insane and taken to the asylum at Jacksonville. Religious excitement, following the dedication of a new church, is assigned as the cause of his mental distraction.

Frank C. Tilton, for fifteen years past a well-known member of the Chicago Board of Trade, in a fit of temporary mental derangement, shot himself dead, Nov. 9. The deceased was a brother of M. M. Tilton, also a Board of Trade man, and was 45 years of age.

The Minnesota & Northern Elevator, at Georgetown, Minn., has been destroyed by fire. The elevator contained 19,000 bushels of wheat, a great portion of which was also consumed. The loss was fully covered by insurance. Incendiarism was the alleged cause of the fire.

The Grangers' warehouse, containing 4,700 sacks of wheat, and the Durham warehouse, containing between 3,000 and 4,000 sacks, located at Durham, Butte Co., Cal., were totally destroyed by fire Oct. 9. The loss on the grain alone was estimated at \$100,000, on which there was \$44,800 insurance. No cause could be given for the fire.

The grain elevator at the Great Western depot at Norwich, Ont., owned by William Merrill, collapsed Nov. 7, and is a total wreck. Over 15,000 bushels of grain, belonging to Ross & Scott, of Tilsonburg, Ont., was stored in the building. The loss is estimated at over \$20,000. The disaster was caused by the foundation becoming unsound.

Oct. 20 an inquest was held into the cause of Stephen Houghton's death, who, as reported in our last issue, was killed by the bursting of a Toronto (Can.) warehouse. Two of the workmen on the wharf testified that after the accident they did not see any rotten timber about the elevator, while another said he had examined the building and found it rotten.

A freight train bound for Duluth was wrecked near Aitkin, Minn., Oct. 15, and when one of the cars containing wheat was sprung open, two tramps, who were stealing a ride, were found smothered in the wheat. From letters found on them their names appeared to be John A. Cochrane and Louis Dust, and their pass books indicated that they had been lately at work on some farm in Dakota.

WHY HE LOOKED PALE.

"Vat makes you look so pale, Moses?"

"Dere is a goot reason vy I looks *pail*, Isaac."

"How dot vas, Moses?"

"Vy, I keeps me now a bucket shop, Isaac."

THE AMERICAN ELEVATOR AND GRAIN TRADE

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HARLEY B. MITCHELL, - - - Editor.

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ADVERTISING.

This paper has a large circulation among the elevator men and grain dealers of the country, and is the best medium in the United States for reaching this trade. Advertising rates made known upon application.

CORRESPONDENCE.

We solicit correspondence upon all topics of interest connected with the handling of grain or cognate subjects.

FALLIBILITY OF CROP REPORTS.

As showing the fallibility of crop reports made up from the returns of farmers, we quote the following figures from the agricultural reports of the state of Illinois. In the returns sent in by the assessors last July, Peoria county was credited with 39,424 acres of oats, averaging 35 bushels per acre and valued at 33 cents a bushel. The cost of production was put at \$11.15 per acre, leaving a net profit on the crop of \$15,769. In Stark county the acreage reported was 31,401 acres; the average yield, 37 bushels, valued at 27 cents each, and the cost of production was estimated at \$10.75 per acre, resulting in a net loss to the county of \$23,865. Knox county, according to the returns, produced 53 bushels to the acre, valued at 22 cents a bushel. The cost of production was put at \$10.25 per acre, a net profit to the county of \$78,872. Marshall county reported 34,622 acres of oats, yielding 42 bushels to the acre, valued at 25 cents a bushel. The cost of production put at \$11.65, the loss to the county was \$39,815. Now these four counties are so much alike in soil and climate that it is hardly likely the range of yield should be from 53 bushels in Knox county down to 35 bushels in Peoria, nor that the Knox county oats was sold at 11 cents less than that from Peoria county. It is more likely that the above discrepancies are the result of a good deal of guess work practiced by the farmers when giving in their report to the assessor, instead of keeping accurate account of acreage, yield, market price and cost of growing the crop.

TRACK WEIGHTS.

By the action of the Chicago Board of Trade, after Jan. 1, 1886, track weights are not to be considered final and conclusive, on grain sold F. O. B. eastern cars in Chicago. It is to be supplanted in that respect by hopper scale weights, which, after a year's trial or more, have been found satisfactory.

This is a move in the right direction. Grain men in the East have long complained of the track weights. Shortages have occurred amounting in some instances to as much as fifty bushels per car. It has not been claimed, at least generally, that any dishonesty has been practiced; simply that the accepting of track weights as final has inflicted injustice upon both buyers and sellers. The whole difficulty lies in the inaccuracy of the system. Track scales are liable to become defective, owing to weather influences. Perfect accuracy has never been claimed for the system; and yet it has been necessary to have

some weight final and conclusive for the determining of disputes between dealers. As nothing else offered, the track weights were made the test.

Now, however, in response to a general demand, the Board has wisely substituted the hopper scale weighing system as final in such cases. It has proved a success both at Englewood and East St. Louis, and its adoption on all the trunk lines would put an end to the complaints which have been so frequent.

SHORTAGE IN CARGOES.

The vesselmen have this season complained more than usual of the shortages that have occurred in grain cargoes; or, the difference between the loading and the unloading tallies. The complaint is directed chiefly against Buffalo, and is louder and deeper than would have been the case had not the season been so unprofitable a one for the vessel owners of the lakes. As it is, shortages have been found at Buffalo which have absorbed all the vessels' meagre earnings to make good. The *Marine Record* has some bitter words on the subject, which we copy on another page.

It is hardly possible that the shortage can be due to any less bulk in the grain owing to evaporation. The reverse would be true if anything. With the utmost jealous care on the part of the elevator and vessel men at Duluth, Milwaukee and other places, shortages of from 50 to nearly 800 bushels have occurred frequently, when the cargo came to be discharged at Buffalo. Such shortages cannot be rationally accounted for on any ground except that of gross carelessness on the part of either those weighing out or weighing in the grain. It would be strange if Buffalo weights were always right; yet that is substantially the claim made by the Buffalo elevator men. The vessel men and shipping men are endeavoring to solve the mystery.

THE HENNEPIN CANAL.

A great many oppose the Hennepin Canal as a National enterprise from selfish grounds; some from their political views, which are opposed to all appropriations for internal improvements, whatever their aim or scope; and still others because they do not fully understand the character and ultimate results of the enterprise.

With the first named class we wish no controversy; indeed, all controversy is precluded, as their supposed interests impel them to opposition. We may remark, however, that opposition bred from such motives is almost ever futile, because it is short-sighted. Yet a large share of the detraction which the Hennepin Canal has met with has come from those who, for years, have been endeavoring to divert the grain trade down the Mississippi to New Orleans, in vain. The promoters of the Hennepin Canal have never refused to withhold the public purse from the costly attempts in this direction.

Opponents who belong in the second class are honest in their sentiments, and no amount of argument can influence them. It is one of those radical differences of political belief which is in the gray matter of the brain, and which argument cannot overcome.

The third class, we presume, is by far the largest. Many believe that as the proposed canal is wholly in the state of Illinois this state should build it. A correspondent expresses this view in another part of this paper. The objection is wholly technical. While the route of the canal does lie entirely within the borders of this state, the benefits to be derived are quite as great to Iowa and the country west and northwest, as would be reaped by Illinois. It is a National enterprise, because it would complete the chain of water communication between the Mississippi and the Atlantic. It is a curious whim which improves by government aid harbors and rivers (many of them preordained to be forever useless) and draws the line at a canal. But the Hennepin will be dug. If it is not, there will be an end to

the granting of public money for rivers and harbors.

DISCRIMINATING AGAINST TOWNS.

Several towns in the Northwest, particularly Glencoe, Minn., claim that the Millers' Association has used all its vast power to "boycott" the town. The alleged cause is that the Minneapolis millers were determined to freeze out the local buyers, who were paying prices that insured business to the town. Accordingly the association raised the price of wheat at points near Glencoe to such a figure that the wheat that would naturally go to Glencoe went to these other points. The Millers' Association tells another story; but that is not essential to the main question, which is, what remedy is there if the Millers' Association or an elevator company chooses to pay more for wheat at one point than at another?

We confess we see none. It would be impossible to legislate against such a discrimination, as an act framed to prevent it would either be declared unconstitutional or else be so loose that a lawyer would have no difficulty in driving his legal team tandem through it. The railroads can easily be estopped from discriminating against a town, but how an institution like the Millers' Association can be prevented from doing so if it sees fit, we fail to see. It opens up a curious phase of the monopoly question.

A DAKOTA PHILOSOPHER.

A. W. Edwards, the guide, philosopher and friend and adviser—extraordinary of the Dakota granger, submits some advice in the *Fargo Argus* to his farmer friends:

Last year farmers delivered their crop to the elevators and held wheat tickets waiting for an advance. The elevators shipped the "hard wheat" to the millers; they mixed it with their "soft" purchases, and sold the production, which was consumed by the world at large, while the farmer was nursing "his ticket," fondly anticipating the advance—which never came. The result was the farmer furnished the wheat to the elevator, paying interest on "his advance," while the miller manufactured the grala into flour and got his money—and the farmer still unpaid. The flour supply being equal to the demand, wheat went down, and then came the harvest of the elevators—buying up their own paper at such figures as they put upon it themselves. It looks like the scheme was sufficiently transparent to see through. So long as farmers do this, so long will they be kept poor. If wheat must go to the elevator, sell it and get the money, this will at least compel the "Millers' Association" to do business on their own capital, instead of utilizing the farmers'—while being robbed.

Now, brother Edwards, two words. We will not deny what you say, although you appear to know a good many things that are not so. But you will do the farmer vastly more good by telling him not to gamble on the price of wheat than by relating to him the wrongs under which he suffers. The trouble with most farmers is that they "wait for an advance," against reason and against sense. If a farmer has his own storage room, it is his own lookout if his opinion of the future market differs from that of other people; but a farmer needing money is hardly in shape to speculate on the price of wheat. If farmers in Dakota are so easily gulled as Mr. Edwards makes out, we cannot wonder that others take advantage of them.

THOUGH some of the more irreconcilable granger papers of Minnesota claim that the grain and warehouse law is a failure, and that the railroads and Millers' Association control the commission, the general view is that the law has fulfilled its first and greatest purpose, the possibility of an open market.

THE suit of Berkowitz against J. T. Lester & Co., of this city, to recover \$900,000 statutory penalty for losses on the Board of Trade, incurred by Edwin Partridge, was dismissed in the Superior Court on the ground that the suit was of a quasi criminal nature, and the Superior Court had no jurisdiction in such cases.

Editorial Mention.

E. H. WALKER, statistician of the New York Produce Exchange, has our thanks for the Annual Statistical Report of the Exchange for 1894.

MR. A. B. COLTON, of the Frost Manufacturing Co., Galesburg, Ill., has returned from Lincoln, Neb., well satisfied with the results of the season's business.

OUT of nearly a thousand cars of wheat inspected here one week, 812 were below No. 2. The mixers are having hard lines. They cannot improve the No. 3 and have to grade up No. 4.

HON. G. S. BARNES, the Fargo head of the Dakota elevator system, has returned from the Pacific coast, and shipped home a pair of elks for his fine park, which he is stocking with deer, buffalo and other animals.

THE *Marine Record* announces that a government vessel is removing buoys. We trust that this vessel will find its way to a certain block on the West Side where we live and where there are a dozen boys that need removing.

THE total value of the breadstuffs exported from the United States during October, 1885, was \$10,225,347, against \$11,772,506 in October, 1884; for the ten months ended Oct. 31, 1885, it was \$112,569,595, and for the same period of 1884, \$122,469,039.

R. M. McGRATH & SON, LaFayette, Ind., call attention of grain men to their Champion of the World Warehouse Sheller, which is specially useful on tough corn, which will form a large proportion of the present crop and will try the souls of warehousemen.

It is a curious fact that of all great cities Chicago is the only one where the elevators are owned by private individuals, stock companies being the rule elsewhere. This is suggested by the recent change of the co-partnership controlling the Wabash Elevator in this city to a stock company.

THOSE who want a shuck sheller, a very necessary article in some regions, particularly in the Southwest, should consult the card in this issue of Kingsland & Ferguson Mfg. Co., 1521 North Eleventh street, St. Louis. The sheller made by this firm can be used to shell corn either with or without the husk.

A PROMINENT Board of Trade man has been carrying his hand in a sling, the result of one of those "rushes" in the wheat pit which often occur on the Chicago Board. The casualties in the wheat pit, of which there are not a few, certainly belong to the preventible class, if the young men there would only try to act like young gentlemen.

THE Appleton Warehouse Company, of Appleton, Swift county, Minn., recently applied to the Chicago, Milwaukee & St. Paul Railroad for permission to erect on their right of way a grain warehouse, but was flatly refused the permission. The application was made under Section 15 of the new grain and warehouse law which provides that "Every railroad company or corporation, organized under the laws of this state or doing business therein, shall, upon application, permit any person, company or corporation to construct, maintain and operate any elevator or warehouse at any of its regular way stations, to be used for the purpose of receiving, storing and handling grain, etc." The railway company say that the

land in question is their exclusive property, and, therefore, have a right to decide who shall occupy it and who shall not. The railroad commissioners, however, think differently, and intend bringing suit against the company at once, to make this a test case.

THE Chicago Board of Trade is determined, if possible, to prevent the smuggling of wheat through to the East by which the grain trade is diverted from Chicago at outlying stations, without entering the city. The Eastern trunk lines are interested in it, as the diversion of this grain permits an easy and safe way of cutting rates without fear of discovery.

A MODEL of brevity and directness is the following from Mr. C. J. Furer, of Fairfield, Neb.: "We have occasionally received the AMERICAN ELEVATOR AND GRAIN TRADE, and like its appearance very much. Inclosed find postal note for \$1 that you may forward same to me regularly." Those who receive sample copies of this issue should copy the above, sign the name, inclose the postal note, and address to us. It will afford practice in model letter-writing.

ATTENTION is directed to the card of Morse Engineering Co., 1306 Union avenue, Kansas City. This concern is the Western representative of the Atlas Engine Works, and does an engineering business, furnishing complete power plants. The company carries in stock a large line of steam engines, boilers, steam pumps, injectors, heaters and engineers' supplies; and their engines are well known all over the Western country.

THE Minneapolis millers have requested the railroads to reduce the grain rate from St. Paul and Minneapolis to Chicago, which was made 17½ cents Nov. 1, to 15 cents. This the managers of the transit roads refused to do, claiming that it is customary to make an advance at this season of the year, and that the increase in expenses warranted it. Last winter the rate was the same; but in former years it was never below 20 cents, and not so very long ago even 35 cents per 100 pounds.

THE WILLIAMS & ORTON MFG. CO., of Sterling, Ill., can supply grain men and others with anything desired in the line of general machinery. They make a fine line of portable mills, adapted for every use; and which have enjoyed a high degree of popularity with millers and grain men. The company is the pioneer of wire-rope transmission in this country, an idea which has saved a mint of money to the users. Those who are interested in the matter should write them for their treatise on this subject.

THE St. Louis elevator men have agreed on penalties for the violation of the storage rates and rules set down some time ago. Each elevator manager is put under a forfeiture bond of \$500 not to break the rules, and besides the elevator shall pay \$20 per car or four cents per bushel for any infraction of the rules and rates agreed upon. These are 1½ cents on wheat, 1½ cents on corn, with a rebate of 1½ cents to all receivers, and a ¾ cent transfer rate; 1½ cents on oats, with a ¾ cent rebate to all receivers.

CHICAGO and New York grain dealers who have been selling short all the corn they could place, anticipating an early rush of corn from this year's crop upon the trade, have been sorely disappointed. The mild, moist weather which has been prevailing since the corn ceased to grow was very unfavorable for curing the crop. The result is that it is not ready yet to pass grade, and not even dry enough to bear transportation over long distances. On the other hand, all the old crop is pretty nearly used up, and there is an unusual scarcity of corn in the market. The short sellers find themselves at the mercy of those who bought what the sellers did not own or control, and have to buy it in at big losses, amounting in

some cases to seven cents per bushel. In New York the scantiness of supply is even greater than in Chicago, and it is said that the sales made there for shipment this month exceed by far the quantity that can be obtained by the sellers. Even if the fair winter weather which has set in continues, it is not probable that new corn will be merchantable within the next six weeks, and many contracts will have to be settled by payment of a difference from the seller to the buyer. The prospects, therefore, are that old corn will command a good price for a few weeks hence, and parties who have any on hand will find it to their advantage to forward it to the market without delay.

It is said that several new elevators are to be built at Buffalo. The only thing in the way is said to be the fear that the Legislature may fix the elevator rates very low. The New York Legislature had better go to work and fix the rates at a reasonable figure, without depending on new and independent elevators to lower them by competition. Experience has proved that the combination at Buffalo is strong enough to crush out competition. Possibly the rumor of the new houses was started by the owners of the old ones.

DR. CHARLES PICKNEY has raised an alarming suggestion as to what may be the physical effect of the Panama Canal when completed. The rotary motion of the earth having a tendency to pile up the water near the equator, and the Pacific Ocean being five times as large as the Atlantic, the water on the Pacific side is lifted twenty-eight feet higher than it is on the Atlantic side. The Canal then would form a convenient outlet to the enormous bulk of water piled up on the Pacific side. Rushing with terrific force into the Atlantic, it is not improbable that the mingling of the two oceans would change the current of the gulf stream; and as the temperature of the Pacific Ocean is about 20 degrees lower than on the other side, there would probably be a considerable decrease of temperature in the Southern states, the consequences of which, to the cotton and rice industry, are quite incalculable.

Farm and Garden takes the railroads to task for the freight rate discriminations they exercise in favor of certain points in the country. Thus Rochester, N. Y., a few years ago was a great milling center. Changes in freight rates by rail made it possible to send flour from St. Paul, Minn., to New York as cheaply as from Rochester; and as flour was carried from St. Paul to Rochester at rates so low that it could be bought for less than wheat, the mills at Rochester had to shut down, and their owners were ruined. The unavoidable losses, says *Farm and Garden*, that occur from such cutting of rates on through lines must be made up by the increase of local rates where there is no competition. The farmer as a rule is the sufferer in the case of grain freight rates, the local rates for a very short carriage to a competitive point being as high or even higher than for a tenfold distance on a through line.

A DECISION important to Board of Trade men has just been given at Chicago in a suit brought by West, Andress & Co. against the Hide and Leather National Bank, to recover grain or its value. The plaintiffs sold 5,000 bushels of cash corn to G. B. Dickinson, on the Board of Trade. Not having on hand warehouse receipts for this amount at the time Dickinson called for it, West, Andress & Co. delivered to him a receipt for 3,699 bushels, and received a check for it on the Hide and Leather National Bank. Another receipt for about 1,500 bushels was then sent over, and a check for the amount due given. Both checks next day were thrown out of the clearing house for lack of funds. Dickinson, it appeared, on the day the receipts were bought, drew a memorandum draft on New York for some \$2,300, and pinned the warehouse receipts thereto. At that time his account with the Hide and Leather Bank was overdrawn. The plaintiffs claimed that it was the universal custom to pay for grain at the time of delivery by checks on the buyer's bank,

and to keep such checks in the bank of the seller, next day to go to the clearing house in due course of business. Dickinson having but one bank account, that with the Hide and Leather Bank, the latter was bound to know that the grain it took that evening was paid for by checks on the bank, which could not be presented until the next day at the clearing house. Under these circumstances the bank had no better title than Dickinson, who had no title until the grain was paid for. The verdict was \$2,306 for plaintiff, the full amount of their claim, with interest from the date of the sale.

At the St. Paul River and Harbor Convention an interesting fact was pointed out by Mr. C. S. Chase, showing what a single county of a new state does in the line of agricultural production when compared with Eastern states. From the reports of the Agricultural Department at Washington it appears that the total production of corn of the states of Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, in 1883 amounted to 8,412,000 bushels; whereas Otoe county, Neb., produced 8,252,855 bushels in 1884; in other words, a single county in a new state, of the average size of other counties in the state, is capable of producing as much corn as all the New England states taken together. Another interesting fact is that Nebraska raised more corn in 1884, viz., 138,091,915 bushels, than New England, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, California, and Minnesota taken together raised in 1883, the combined productions of these states being only 135,574,100 bushels.

MUSTY GRAIN.

There is undoubtedly greater complaint of injury to grain after it is secured in the barn or stack now than formerly. It is a fair presumption that our changed methods of harvesting have considerable to do with it. One of the effects of labor-saving harvesting machinery is to enable farmers to grow much larger amounts of grain, and it is only in large bulk that grain is liable to injury from heating, which is the cause of mustiness.

While the slower methods of harvesting exposes crops to damage from prolonged rains, it was less liable to injure them after the crops had been housed. The self-binding harvesting machines bind the grain in tight bundles as rapidly as cut. Where grass or weeds abound in grain it requires several days to dry the bundles, and even then there will be too much dampness in the centre. This is the reason why grain sweats, as it is called, more violently than it used to do. If the outside of the bundle has been well dried, the straw will absorb superfluous moisture from the centre without material injury. But such grain cannot be threshed, except without much extra labor, until the sweating process is completed. If threshed before sweating has begun, the grain will need careful handling, to be spread thinly and frequently turned, or it will be somewhat injured.

A much larger proportion of grain has been over-heated either before or after threshing than is commonly supposed. It may not be absolutely musty so as to injure its sale, but when sown some will entirely fail to grow, and other portions will make a feeble start, showing how the vitality of the germ has been impaired. The greater difference in quantity of seed required or sown by various farmers indicates more the difference in seed than anything else. Some have good success with a bushel or five pecks of wheat, and a bushel and a half per acre of oats or barley, while others think they need twice as much as this per acre. Unless the former are mistaken, it is pretty certain that considerable of the seed sown rots in the ground and is useful only as manure. When grain was harvested more slowly smaller quantities of seed were sown per acre, and there was less complaint of insufficient stand.

Where grain is stacked the danger from too much dampness is increased. It is very rare to thresh from a stack without having considerable grain wet from recent rains. Unless this is kept by itself it may cause injury to the whole. The stained or damp grain is nearly as good for feeding, and it should be saved for that purpose. The threshing itself is commonly hurried more than is good for the grain. In the mow the straw continues to aid in the proper development of the grain, at least to the extent of separating it. The chaff in the head surrounding the berry is dry, and there is less danger of the grain spoiling than when separated and put in bulk. One of the grains most liable to mustiness is barley, and the fact that malsters do not wish to purchase barley until cool weather in the fall is very suggestive. If they make an offer during hot weather it will be at a low price as to warrant them in taking some risk of entire loss.

When grain has been threshed very early it should be carefully watched, spread as thinly as possible and turned at least every other day. Very often at threshing

the temperature is so warm that barley will germinate in forty-eight hours. If there is the slightest degree of outside moisture in a heap of this grain, it is almost certain to spoil when placed in heaps three or four feet deep. When the grain has once sweat in the mow the danger is less, but all grain newly threshed should be watched while warm weather continues.

ELEVATOR SHORTAGE.

On another page of this issue will be found a strong and interesting statement by the tally man of Duluth Elevator "E," regarding shortage, which has been called forth by recent articles in the *Marine Record* in relation to shortage in grain cargoes. The article referred to is by Mr. V. D. Nickerson, a former Cleveland, whose veracity and earnestness can be vouched for by any one of his acquaintances. His letter is well supported by certificates from all the officials of the elevator system of Duluth, officially signed. While we believe that this is the right way to get at and eradicate this evil of shortage, we are not prepared to take this exhibit as final, but desire that Buffalo elevators present their side of the case, and it now devolves upon them to make a showing, especially when it is considered that wherever lake boats are loaded with grain, at Duluth, Chicago, Milwaukee, Port Huron, Detroit, Toledo, the charge comes back that Buffalo elevators weigh them out short. It is true some of the Duluth elevators are new and probably not working with that exactness that is required in order to insure correctness, and it is also true that oftentimes damaged grain is charged up to shortage, but neither of these reasons will apply universally, so that it will be understood by all interested that there is a hole in the skimmer somewhere. It is known that the Buffalo system of elevators is run by a corporation whose one aim is to amass wealth, the Jesuitical adage being applied that "the end justifies the means." On the other hand, it has been the custom of the Duluth elevator people to send a boat to two or three elevators to secure her cargo, thus making it almost impossible to locate a shortage at that end, even if the Buffalo people be ever so honest and careful in weighing out, so that between the two the vessel is quite sure to be fleeced, without any resource or appeal. We have succeeded in securing, with much difficulty, the following exhibit of the cargoes of the Wilson Transit line, which, perhaps, carries more grain between Duluth and Buffalo than any other one line on the lakes:

[The table shows a shortage of 810 bushels and overruns of 312 bushels.]

In presenting this table we leave those interested to draw their own inference. We will direct attention, however, to the fact that but one cargo in the twenty-two items specified in the bills of lading tallied, when delivered at Buffalo, either being more or less than called for by the bill, and the amount charged to damage being very light when compared with the quantity carried. The fact that oftentimes there is more grain than the bill of lading calls for does not assure us that the elevators are working right or that the tally men use that care and exactness in tallying weight that should obtain any more than it does when the cargo weighs out short, and but supports the view, many times urged in the columns of the *Record*, that we must have a bill of lading that will cover this evil. The fact that there is one cargo in the table given above, the pounds and bushels of which correspond at each end of the route, shows that perfection can be attained by tally men, and therefore there is no reason why it should not be done. That exception also shows that there could be no valid objection to the adoption of a uniform bill of lading for grain cargoes, and we trust soon to be able to record it as an accomplished fact.—*Marine Record*.

FREEZING OUT THE INDEPENDENTS.

The Glencoe, Minn., *Register* makes a strong protest against the boycotting system which Glencoe grain buyers have of late been exposed to through the action taken by the Minneapolis Millers' Association. Nearly all last season, it is claimed, Glencoe buyers were laboring under this disadvantage, that, being governed by Minneapolis prices, they could not afford paying as high prices as were paid, for instance, in Plato and Norwood. Naturally a great deal of trade went to these and other points that otherwise would have come to Glencoe. Now, during last season several new buyers entered the field, among them Buchanan & Sievers and Preiss & Son, and all dealers started in as before, intending to be governed by Minneapolis prices as far as possible. But at once a difficulty arose when the pure Scotch Fife shipped from Glencoe was graded in Minneapolis No. 1 Northern instead of No. 1 hard, making a difference to the farmer of five cents less than he could get at Howard Lake and other points on the Manitoba Road. The result was that all the wheat to within about four miles north of Glencoe went to the Manitoba line.

The Glencoe buyers, failing to get better grading in Minneapolis, then resolved to cut loose from the Millers' Association, to buy and sell in open market by sample, and to pay No. 1 hard prices for No. 1 Northern. No sooner had they done so when the association decided to "freeze them out" by advancing prices at all competing points to five cents and more above the highest market price, until Glencoe came down to prices that they might dictate. On Oct. 29 the price of No. 1 North-

ern in Minneapolis was eighty-five cents cash, while the price fixed for Glencoe that day was seventy-one cents. The local buyers of that place paid seventy-five cents for wheat graded No. 1 Northern in Minneapolis. To "freeze out" these independent buyers the association advanced the prices thirteen cents on a bushel at Plato, six miles east of Glencoe, and nine cents at Sumter, six miles west. Also on the St. Louis and Manitoba roads prices were advanced three cents over Glencoe prices.

The Glencoe buyers, claiming that they find no difficulty in disposing at a living profit of the wheat they buy at from four to eight cents above the price fixed by the association, firmly believe that it is the determination of the association to crush all independent buyers by pursuing the policy as described above. For no independent buyer can stand against the powerful monopoly for a single week, because ninety out of 100 farmers will not see that it is to their own interest to stand by the local buyer. For a paltry five cents extra they will aid in crushing him, regardless of consequences. For when the independent buyer is driven out of the field the association man has it all his own way in dictating his prices to the producer.

THE MINNESOTA INSPECTION LAW.

A prevailing impression that the new system of state inspection and weights in Minnesota is not giving satisfactory financial results, and that consequently it will prove a source of expense to the state, is refuted by the fact that during the two months the system has been in operation the receipts have been greatly in excess of the expenditures. September and October being busy months in the wheat trade, there may be a slackening up in receipts hereafter. Yet there is no ground for anticipating a deficiency, the state fees being 25 cents for inspection and 20 cents for weighing, per car, against 20 cents for inspection and 20 cents for weighing under the former regulations, while the salaries paid are about the same as those paid by boards of trade and milling associations. There is another favorable feature about the new law. The state inspectors and weighers, being in the employ of the state, have no special reason for not acting impartially, while under the old system the inspectors and weighers were generally employed by and naturally worked in the interest of the buyer, making the farmer pay the running expenses.

INDIAN WHEAT COMPETITION.

The recent further fall in the Eastern exchanges, and the consequent stimulus given to Indian trade, is exciting no small interest in business circles both here and in the United States. The advance made by India in the exports of her wheat is certainly most remarkable. Like America, she has an almost unlimited acreage, but, unlike America, she has cheap labor, and, in the opinion of some, the time may yet come when she may beat the United States out of our markets. The following figures will show to what extent the wheat shipments from India have increased during the last ten years:

	1875	1876	1877	1878	1879	1880	1881	1882	1883	1884
Exports	669,839	1,643,116	3,574,106	1,002,425	488,646	1,773,216	3,836,861	4,339,704	5,261,255	3,175,425

Remarkable as these statistics are, the wonderful progress made will be better recognized when we state that the quantity of wheat exported from India to England in 1875 was only one and one-quarter million cwt., whereas last year it was over ten millions.

How keen is the competition of India in the wheat trade with the United States and Russia will be best seen from the following figures: In the first eight months of the present year we imported altogether, in round figures, forty-two million cwt. of wheat, of which the United States supplied twenty millions, Russia seven and one-half millions, and India six and one-half millions. India, it is therefore plain, is rapidly approaching an equal importance with Russia as a supplier of wheat to this country, and she already sends about one-third as much as America. The opening of the Indian Midland Railway is expected to give a fresh development to the trade, for that line will open up a great wheat-growing region and much shorten the distance over which the grain is now conveyed. Mr. Smeaton, a director of the Agricultural Department in the Northwest Provinces, estimates that the sea freight from Calcutta to London amounts to 9.69 shillings per quarter, and from Bombay 7.27 shillings. He calculates that wheat from the Northwest, exported from Calcutta, can be landed in England at 31.57 shillings per quarter, or if sent via Bombay, at 31.84 shillings per quarter.

Another point to be considered as calculated to stimulate the Indian wheat trade is a further fall in silver, which may take place should the Bland bill be repealed, and \$5,000,000 more silver per annum thrown on the markets of the world; at the present range of prices, it may be taken that a fall of about three per cent. in the value of silver would be equivalent to a rise of one shilling per quarter in the price of wheat. Too much stress, however, should not be laid on this point. Although we fully believe that the Bland bill will be repealed, it is by no means so clear that silver will depreciate much more. The United States will probably require some silver for coinage, as token currency, and next, silver will be in much greater demand for India if Indian exports continue to increase as they are doing at present.—*The Shipping World*.

Canals and Marine.

Lake freights from Chicago to Buffalo are $3\frac{1}{2}$ cents for corn and 4 cents for wheat.

The season's navigation on the Illinois and Michigan Canal will close Nov. 25, per order of the commissioners.

A scheme is afoot in France to convert Paris into a seaport town. It is proposed to build a ship canal from the seacoast to the capital.

The father of the Hennepin Canal scheme is said to be George H. French, of Davenport, who during the war advocated the construction of a waterway between the Mississippi and the great lakes so that naval vessels could operate in both, and dispense with the dangers of an ocean trip.

Work on the Erie Canal is reported progressing very satisfactorily since Superintendent Shanahan has assumed office, and though less than \$600,000 have been expended during the past year, which is half the amount spent in former years, the condition of the canal is better than it has been for nine years.

The Italian Consul at Jerusalem, in an official report, calculates that the projected Palestine Canal can be constructed at half the cost of the Suez Canal, and maintained at much less expense, besides providing a passage to the East of four hours less duration. It would afford access to new countries among the most fertile in the world, and traffic by means of sailing vessels between the East and the Mediterranean would be greatly increased.

From Paris it is telegraphed that M. De Lesseps has applied to the French government for permission to issue new Panama Canal bonds to the amount of \$120,000,000, to defray what he describes as needed expenses in excess of the original estimates for the completion of the isthmus waterway. In his application M. De Lesseps states that if the French Chamber of Deputies grant his present request it will save \$3,500,000 in interest yearly, as the grant will include permission to raise as much of the money as possible by the sale of tickets for lottery drawing.

In 1883 there were shipped from Buffalo, by canal, 42,609,204 bushels of grain, compared with 29,683,880 bushels in the previous year. In the ratio of this enhanced movement so has it lent to the lake ports the potent influence that has aided in drawing thereto the grain for lake shipment. A through water highway from the Mississippi River to the seaboard, in cheapening and regulating the rates of transportation for Western production, is of inestimable worth. Therefore should the Hennepin Canal be constructed. All the Northwest is vitally interested in it.—*Western Manufacturer.*

Decisive steps, it is finally announced, have been taken toward constructing a ship canal between Maryland and Delaware. It is proposed to use the Sassafras route, by which the canal will run from the mouth of the Sassafras River in Chesapeake Bay to Liston's Point in the Delaware, a distance of seventeen miles. Five commissioners have been appointed to condemn the lands along this waterway, thus giving reality to the scheme which has been agitated for more than a dozen years. It is said that the necessary stock has been taken by Baltimore, Philadelphia, and New York capitalists. A New York firm, which has taken the contract for construction, states that it can be finished for \$8,000,000. New York and Baltimore will then be nearer to each other by 225 miles.

We notice from the last report of the Mississippi River Commission, covering its operations from Oct. 1, 1884, to June 30, 1885, that \$2,240,000 have been expended on the bank revetment between Cairo and Vicksburg, and \$2,500,000 on works for contracting the channel of the river where the width is excessive and navigation bad. The general plan includes also the closing of the outlets, in order to concentrate the waterway. The commission says, however, that the work of improvement so far done is of no practical benefit to navigation until it is extended up and down the river. The estimate for 1886 is the same as this year, and \$3,154,000 are asked for 1887. But, says the commission, the cost of improvement to the extent and in the manner contemplated will considerably exceed these estimates.

At the meeting held by the Upper Peninsula Convention at Ishpeming, Mich., on Oct. 14, it was resolved: "That the immediate improvement of the Hay Lake channel, St. Mary's River, and the construction of a new lock, both to a depth of 21 feet, as recommended by Gen. Poe, of the United States Engineer Corps, are of the utmost importance to the commerce of the Northwest; that our Senators and Representatives in Congress are requested to urge special legislation to secure that result." Another resolution was also adopted, urging the government to buy the canals of Portage Lake and the Lake Superior Ship Canal of the Railway and Iron Company. An executive committee of nine was appointed, five from Michigan, two from Wisconsin, and two from Minnesota. Among the prominent delegates present were: Gov. Alger; the Hon. Seth Moffat, of Traverse City; ex-

Congressman Jay Hubbell, of Houghton; Lieut.-Gov. Sam Fifield, of Ashland; J. A. Crozer, of Menominee; H. W. Seymour, of Sault Ste. Marie, and many others.

In the way of improvement of the Mississippi River for navigation a new, ingenious scheme has been devised which, though not sufficiently developed to decide upon its ultimate feasibility, promises fair to become a success. Instead of trying as heretofore to clear the river by endless dredging from the large amounts of alluvial matter deposited at various points during the seasons of flood, large reservoirs are constructed upon the head waters of the Mississippi and its tributaries to collect surplus water during the seasons of flood to be systematically released when the water falls so as to facilitate navigation upon the Mississippi below St. Paul and the reaches of the several streams below the dams. Only part of the proposed dams have so far been completed. Some time ago the gates of the Winnibegish dam, as well as those of the Leech Lake dam, were closed. During this short time the surplus water collected in the two reservoirs amounted to about 12,000,000,000 cubic feet. After their influence on the main stream will have been thoroughly tested, it will become apparent whether or not the extension of the system is advisable.

Says Congressman Murphy: "The general prejudice against the canal has disappeared very much, and the local prejudice against the canal in St. Louis has also disappeared, for they are beginning to realize the fact that Chicago, St. Paul and St. Louis are the three great terminals where bulk will be broken. To my mind St. Louis is more interested in the construction of this canal than any other point, including Chicago, for the bulk will be broken for the grain from the whole Southwest that is shipped Eastward, and of the commerce and manufactured products that are shipped West. Therefore it pleases me to say the feeling in St. Louis for the construction of this canal has improved very much in the last few months, and if that improvement continues I believe that they will realize the importance of its construction to the commerce of St. Louis and will cheerfully indorse it. I have met while in Washington the past few days a number of St. Louis people who talked favorably of it. The advantage to St. Louis would be this: The canal boats and barges would enter the port of St. Louis, there to be filled with grain out of her elevators, and transported to Chicago. Those boats in return would bring anthracite coal, oil, glass, etc., that go now over the Alton Road from Chicago to St. Louis, but the cost of transportation would be at least 50 per cent. if not 75, in many cases, less than to-day. Indeed, St. Louis would derive great advantage. Nine-tenths of the salt that enters St. Louis by rail comes from Chicago, and what is true of salt is true of oil. Coal purchased in the West is always purchased from June to November. Coal is brought from Erie and landed in Chicago for 50 to 60 cents per ton, 1,000 miles by water, and it costs to-day to land that coal at any point in the Mississippi Valley, 200 miles west of Chicago, four times as much by rail as it does by water five times as far. In other words, no one can deny that water transportation is 50 to 75 per cent. cheaper. That is why England, Germany and other European nations are to-day expending hundreds of millions of dollars in the construction of canals and improvement of waterways, giving relief to their people against the charges of the railways. And if it is true in England it is equally true in this country.

THE WHEAT PEST.

One of the suggestions made by a report of the Kansas Board of Agriculture, for guarding against ravages from the Hessian fly is that the land be pastured with sheep. The consequent close cropping of the wheat in November and early December may cause many of the eggs, larvae, and flaxseed to be destroyed.

The eggs, says this report, hatch in about four days after they are laid. Several of the maggots or larvae make their way down to the sheathing base of the leaf and remain between the base and the leaves and stem near the roots, causing the stalk to swell and the plant to turn yellow and die. By the end of November, or from thirty to forty days after the wheat is sown, they assume the flaxseed state, and may, on removing the lower leaves, be found as little, brown, oval, cylindrical, smooth bodies, a little smaller than grains of rice. They remain in the wheat until warm weather; in April the larva, rapidly transforms into pupa within its flaxseed skin the young fly emerging from its case about the end of April. The eggs laid by this first or spring brood of flies soon hatch, this brood of maggots live but a few weeks, the flaxseed state is soon assumed, and the autumn or second brood of flies appear in August. In some cases there may be two autumn broods, the earlier (August) brood giving rise to a third set of flies in September. —*Minnesota Farmer.*

WHY HE DON'T SUCCEED.

"My brudder Moses nefer get rich if he vhas in der clothing peeseness for a tousand years."

"Don't he buy goods close enough?"

"Dot doan make somebody rich. Der trouble mit Moses vhas dot he vhas too oxcited. When he belief dot England and Russia go to war he put \$300 into wheat, and in five days he lose eafery cent."

"What should he have done?"

"Keep dot money in his pocket and mark his stock up 20 per cent."—*Wall Street News.*

NOTES FROM THE EXCHANGES

Memberships in the New York Produce Exchange rose lately from \$2,650 to \$3,150; and it is hinted that some of the speculators have been boosting the market.

The Buffalo Merchants' Exchange have petitioned the owners of the Buffalo elevators "to bulk in the future all cargoes of Duluth wheat of the same grades," in order to give them a better opportunity for a general dealing in options.

Winslow Judson has been elected president of the St. Joseph, Mo., Board of Trade. The board of directors constitute the following gentlemen: W. A. P. McDonald, F. L. Sommer, E. L. Morney, A. N. Schuster, J. W. Walker, C. A. Shoup, H. R. W. Hartwig, J. M. Frazer, R. T. Davis, J. C. Gregg and A. C. Dawes. There was an unusual interest taken in the election, eighty-five votes being polled.

The Duluth Produce Exchange held the first trading session Nov. 10. A fair amount of produce was offered for sale and disposed of at good prices. At a meeting of the directors last night it was voted to increase the membership fee to \$100 when the number of members reached 500. At the same meeting enough members joined to increase the list to the required number, so the price of membership will in the future be \$100.

Says the *New York Produce Exchange Reporter*: "It is said that the grain warehouse men are now classed under the head of 'pawnbrowsers' by the municipal authorities. It is further rumored that they have received notice of a tax of \$500 per annum upon these grounds. If the payment of this is insisted on it will probably result in an increase of at least 1-16 on the premium on wheat options. There is doubtless no truth in the rumor that the warehouse men are having three gilded balls made. There is one consolation, however, and that is, if the 'pawnbrowsers' keep the wheat in camphor it won't get out of order so quickly. Eh, Uncle?"

A correspondent to the *Pittsburgh Dispatch* notices this peculiarity in the grain market of New York, that the business is generally done by young men, some of them mere boys. At the Produce Exchange the heads of firms will sit in comfortable arm-chairs at one side of the pit while the brokers and younger partners consult with them, read telegrams to them, and execute their orders. Only when the market is booming they deem it necessary to take their chance in the pit of being shoved about and stepped on by the youngsters, who, during excited times, have no more respect for a millionaire than they have for a bag of flour. The young men who are anxious to get rich quickly are attracted to the grain market from the good reason that it costs them only \$3,000 to get into the Produce Exchange, while a membership at the Stock Exchange now costs \$27,000.

The Chicago Board of Trade is the only institution of its kind that can compare at all with the New York Stock Exchange. Yet there is a vast difference of business capacity between the two exchanges, as is pretty clearly indicated by these facts. A seat on the New York Exchange recently sold for \$34,000, while the present rate for a membership on the Chicago Board is only \$2,500. The amount of business done in shares and securities in New York can safely be put at \$5,000,000,000, whereas dealing in Chicago, being limited to the agricultural products of the country, can hardly exceed \$1,000,000,000. The reason is, New York is not only the center of the capital of the Atlantic states, but also the reservoir of Western capital, and it is stated that Chicago speculators are making far more money in stocks at New York than they ever made at home in wheat or pork.

The Boston Board of Trade was organized in 1854 by a number of merchants in behalf of the commerce of Boston and the benefit of the port. It occupied rooms in State street briefly, and in Chauncy street for a number of years; but after the great fire in November, 1872, it decided to establish under its auspices a Merchants' Exchange, second to none in the country. The first Merchants' Exchange was established in 1842, when the present building was built. Notwithstanding that this was well equipped and well managed, it met with indifferent success, and some time before the great fire it gave way for the Sub-Treasury, which occupied the place until removed to its present quarters. When the Board of Trade took the matter in hand its object was to establish an Exchange after the most approved plan and on a par with the best in the country; its ambition was to group all the business exchanges of the city under one roof, with the Merchants' Exchange as the main gathering place. The old building was extensively remodeled, and to some extent rebuilt inside. Then the new Merchants' Exchange and Reading Room, as thoroughly equipped and as admirably arranged as any in the country, was opened to subscribers on Oct. 1, 1873. Admittance to the Merchants' Exchange and its privileges was given only to subscribers. These numbered in 1878 about 1,100, a falling off of nearly 500 since the establishment of the rooms, and the number has since diminished still more. Now it looks as if the career of this once prosperous Board is over.

THE WEDDING GIFT.

The wedding guests had departed and the happy couple were making ready to go to the depot, when the newly-made father-in-law approached the newly-made son and said:

"Julius, I didn't place a check for \$20,000 under Hattie's plate, as is often done."

"No, sir; you didn't."

"Instead of that, Julius, I credited the amount to you on a deal in wheat. It's so much margin put up by you, you see!"

"Yes, sir. In case you call for more margins and I can't put up, you'll—you'll—"

"Close you out, of course, Julius. Good-bye, and may the Lord bless both my dear children."

THE COUNT WALTZ.

"My dear," she said, as he finally laid down his newspaper, "how did your last deal in wheat come out?"

"Lost about \$20,000," he growled.

"Why, you said you were sure of making \$50,000."

"So I was, but I didn't."

"That's a downright shame! You know that Nellie is to marry the Count Italiani, and that he wants \$50,000 for his title."

"Can't help that."

"Well, it's awful mean. Nellie is waiting for her Count and the Count is waiting for his money, and here you drop \$20,000 as if your daughter's happiness was the last thing to be thought of. I don't believe you have a father's heart in you."

HOW HE MADE IT ON WHEAT.

Saw a man yesterday who has made \$10,000 this fall in wheat.

Saw another man about ten feet behind him who told me how he made it.

His wife inherited \$10,000 in cash. She wanted to double or lose it. Husband was perfectly willing. She gave it to him to invest in wheat and she lost it. Instead of investing a dollar he placed the whole in bank, and has the certificate of deposit in his wallet to-day. Speculative wives are now firm and in good demand.

NO SMALL EARS.

Down at Peabody, a few days since, while Prof. Worral was building the monument forty feet high, covered with ears of corn, an amusing incident occurred. It was decided, for effect, to put the smallest ears of corn nearest the top of the monument. When the artist called for the small ears he was told that he had been furnished with the smallest to be had. "It is too bad," remarked a wit, "that we have not time to send to Illinois for small corn."—*Howard Democrat.*

HE ONLY SORTER DRAGGED ALONG.

"I dare say you suffered much in your section from the failure of the corn crop last year," said a Kentuckian to a man from West Virginia.

"Stranger, we did. I had to get along myself for nearly three weeks on a single pint of whisky."

"Merciful heavens! And yet you lived."

"Well, no; not exactly. I jest sorter dragged along."

WALL STREET ANIMALS.

"Were you a bull or a bear?" asked an acquaintance of a speculator.

"Neither," he replied, "I was an ass."

Special Notices.

The Chicago Scale Co. sell Scales of all kinds, also Portable Forges and Blacksmiths' Tools of all descriptions at about one-half usual prices. Buyers will save money by sending for their price list.

TO ELEVATOR AND MILL MEN.

A young man would like a situation in elevator or feed mill. Have had ten years' experience in the elevator and grain business and produce commission. Good references furnished. Address
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To lease an elevator doing a business of from 300 to 700 carloads per year. Best of references given. Address

J. W., care AMERICAN ELEVATOR AND GRAIN TRADE Chicago, Ill.

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By a young man of good habits. Not afraid of work. Experienced in the grain and stock trade and capable of managing same. No objection to a place with plenty of business. Chance to work up more an object than big pay. Iowa or Nebraska preferred. Address

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A new Fanning Mill. For particulars address
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A new steam elevator; all modern machinery. Trade established twelve years. Only one other elevator in the place. Address

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FOR SALE.

A good elevator of 15,000 bushels' capacity, equipped with good machinery. Located in the great corn belt of Iowa on the line of C., M. & St. P. R. R. For particulars address

J. W. STEVENS, Defiance, Iowa.

FOR SALE.

Steam elevator. Good trade. Capacity, 10,000 bushels. Now handling carload of grain per day. Will be sold at two-thirds value. Everything nearly new. Best of reasons for selling. Address

R. HEFFELFINGER, Denison, Iowa.

GREAT BARGAIN.

Situated on a trunk line, in Ohio and Indiana, in good towns, four nearly new grain warehouses, strictly first-class throughout; for sale cheap. Best of reasons given for wishing to sell. Address

E. E. Co., care AMERICAN ELEVATOR AND GRAIN TRADE, Chicago, Ill.

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A No. 5 Victor Smutter, Barnard & Leas' manufacture; also one Reed's Novelty Grain Separator, tip-top, for cleaning flax seed. Both machines in first-class condition, and have been very little used. One Smith & Beggs Engine, 14x24 stroke, piston valve, vertical steam feed pump. Boiler 20 feet long, 48-inch shell, cast-iron front, breeching and grate bars. Stilwell & Bierce heater, 24 inches diameter. Smoke stack, guy rods, steam pipe, and everything complete for setting up. Engine in good running order. Will sell cheap for cash. Address

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Yours respectfully,

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Cairo, Ill.

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Yours truly,

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Yours,

A. G. WALKER, Manager
for "The Hudnuts."I. D. RICHARDS, President.
ARTHUR TRUEDELLE, Secretary.H. B. NICODEMUS, Treasurer.
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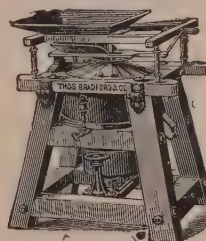
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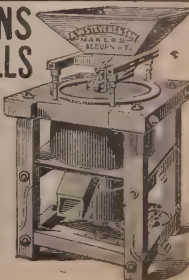
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By its use, from fifteen to forty per cent. can be saved in the cost of fuel, besides the expense of putting in new flues ever one or two years.

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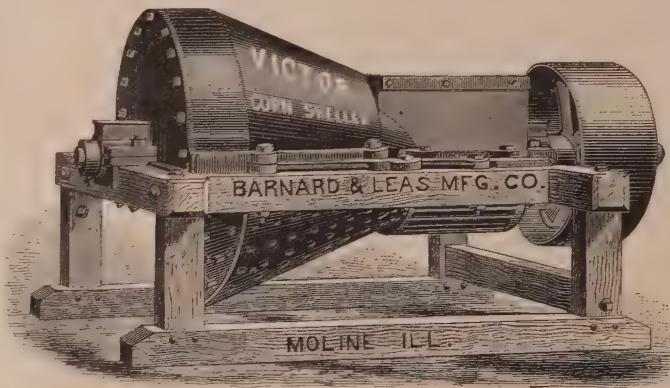
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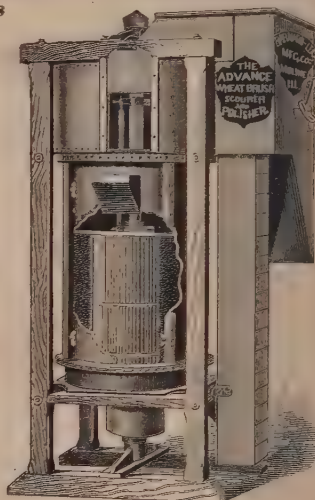
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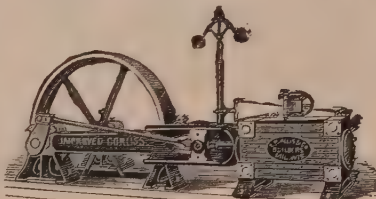
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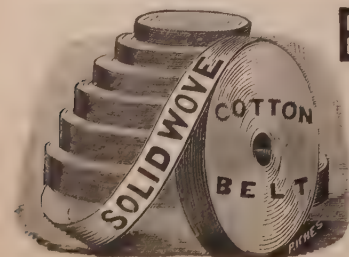
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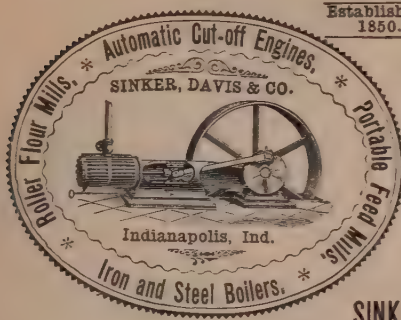
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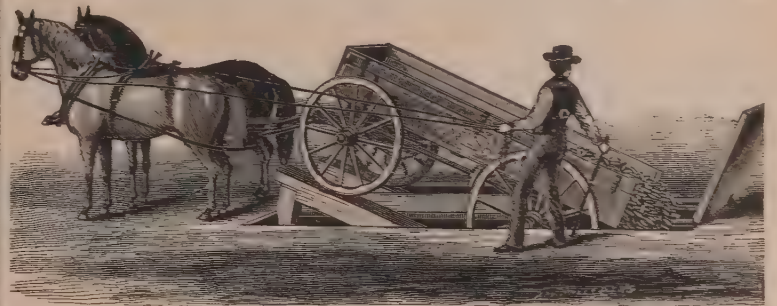
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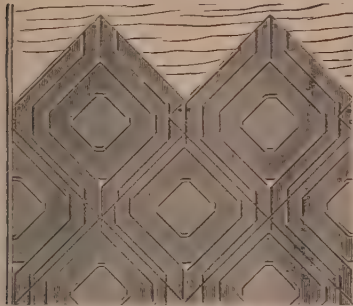
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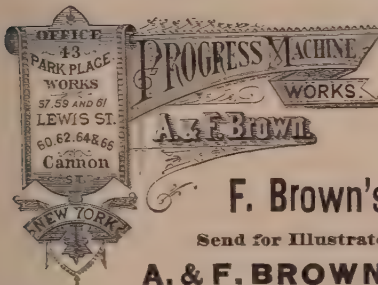
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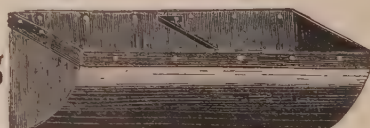
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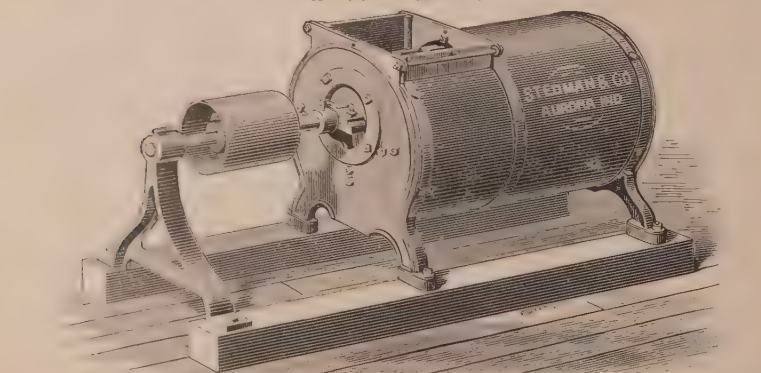
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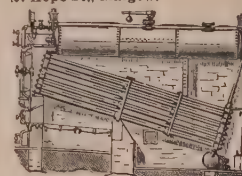
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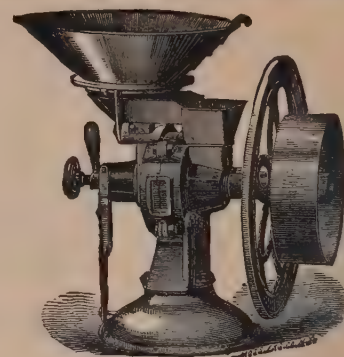
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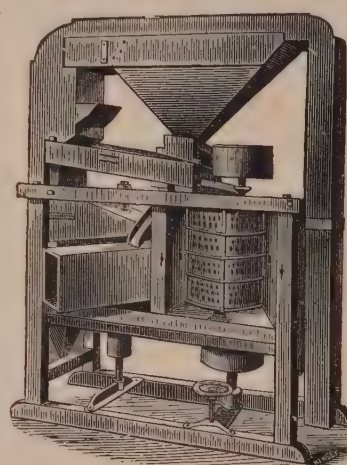
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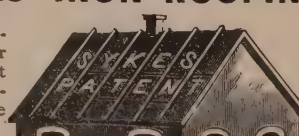
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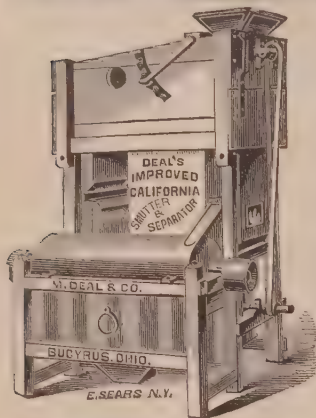
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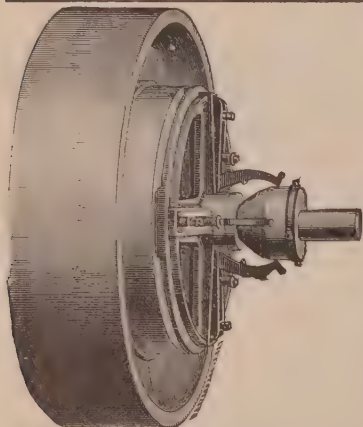
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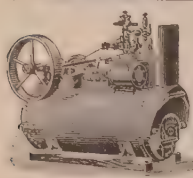
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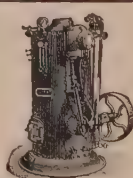
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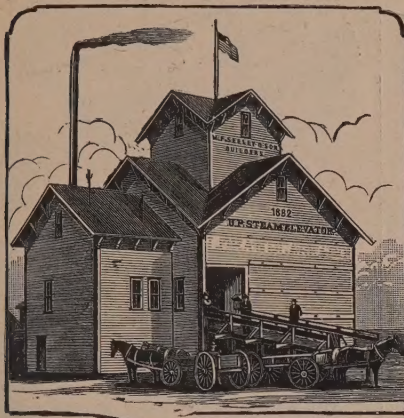


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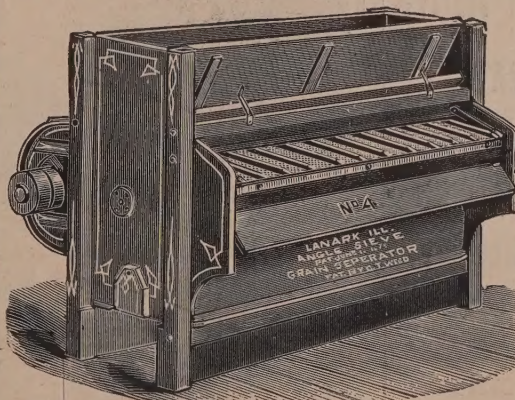
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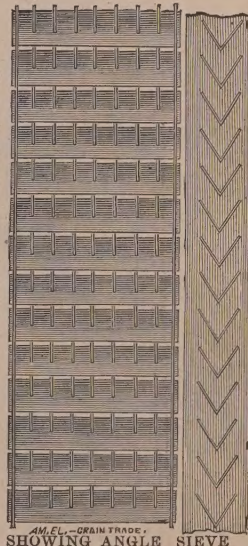
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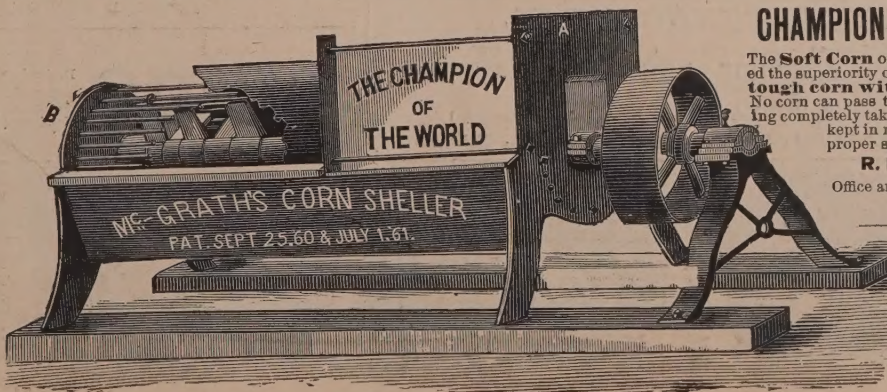
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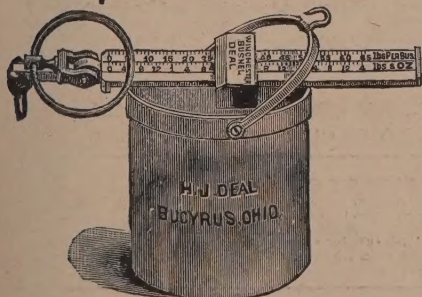
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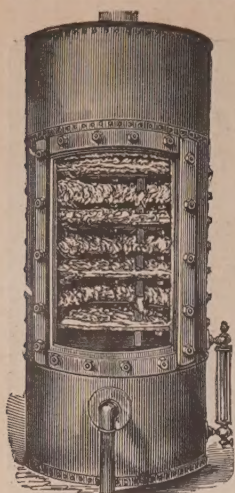
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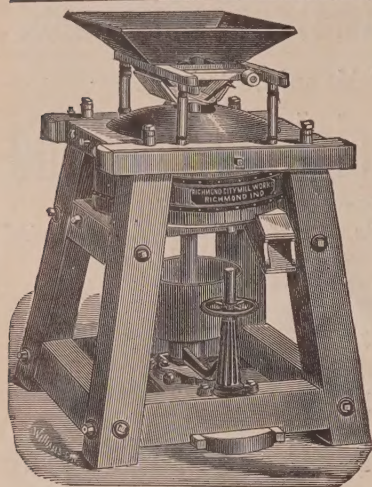
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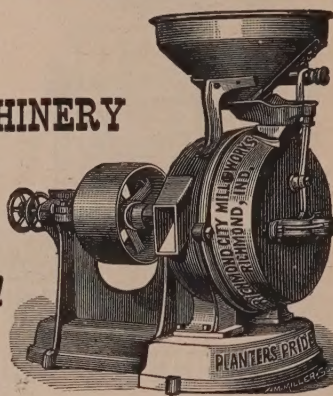
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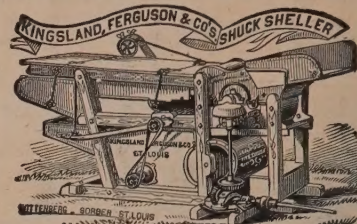
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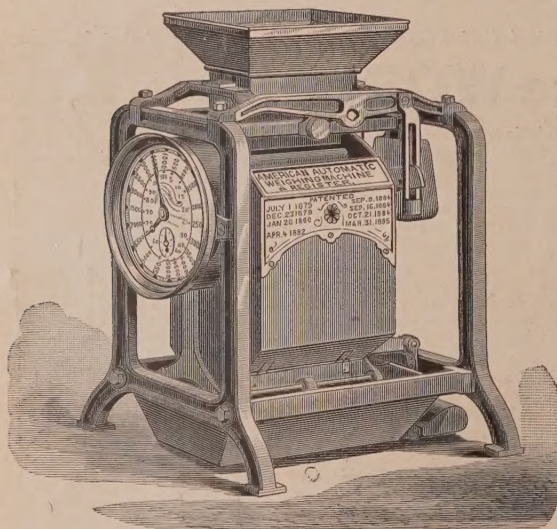
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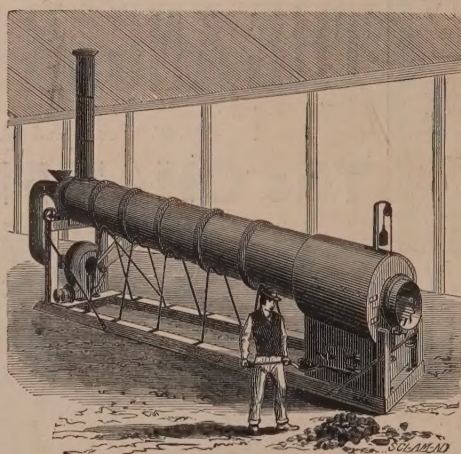
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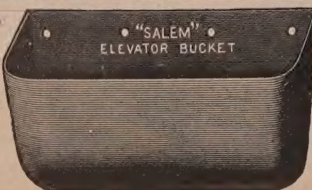
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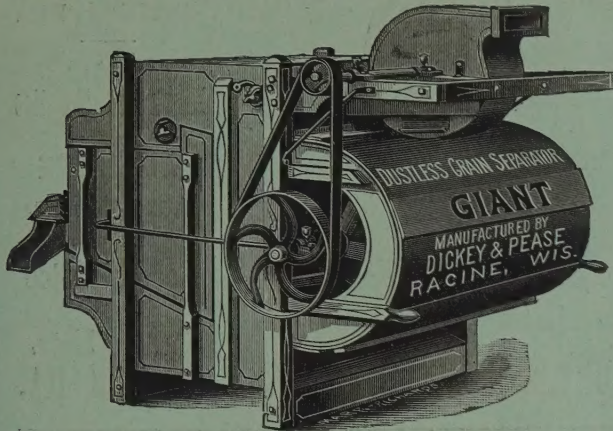


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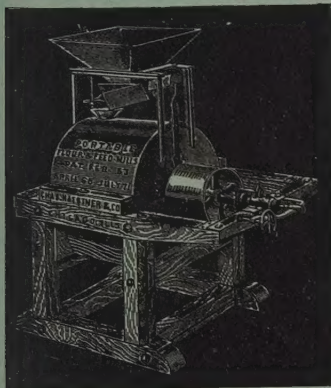
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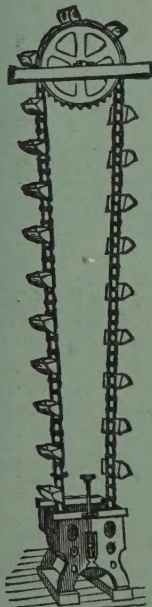
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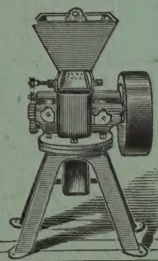
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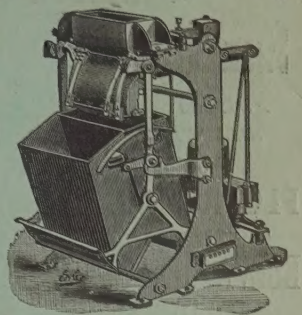
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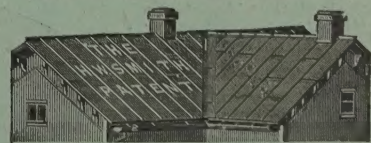
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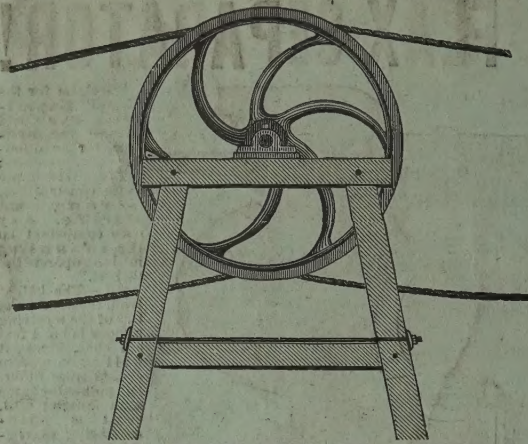
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OFFICE OF TUDOR, ELLIOTT & Co., Grain and Chop-
ped Feed, HOLTON, KAN., March 21, 1885.

DEAR SIR:—We like the plan of our Elevator very much, and do not think that for a building of the size of ours the plans could be improved upon. Everything is simple and handy, and very easily run. The machinery works fine, and has ever since we started, and the Sheller is the best we have ever seen. The Corn and Wheat Cleaners could not do any better work than they do. We are fully satisfied and pleased with everything, and

should we conclude to erect another Elevator at some other point, will consult you for a plan.

Yours very truly, TUDOR, ELLIOTT & Co.

B. F. BLAKER & Co., Lumber, Building Material,
Grain and Flax Seed,

PLEASANTON, KAN., March 5, 1885.

DEAR SIR:—The Elevators you designed for us at Fontana, Kan., and Sprague, Mo., are giving entire satisfaction, and the machinery all does its work well. We consider your plan very convenient, substantial and economical.

Yours very truly, B. F. BLAKER & Co.

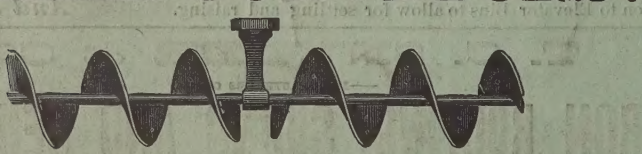
BRINSON, HILL & Co., Grain Commission Mer-
chants, OTTAWA, KAN., April 2, 1885.

DEAR SIR:—Replying to your favor of recent date, we take pleasure in saying, our new elevator built here last season, on your plans and specifications, gives us highest possible satisfaction; and the machinery furnished by Barnard & Leas Mfg. Co. is first-class in every respect, and works to our entire satisfaction. We have, up to this date handled about 150,000 bushels of ear corn, and a large amount of other grain through our elevator, and with your complete outfit of machinery, etc., and have not been to a nickel's expense or had one minute's delay from any cause whatever, all of which we credit to your well-arranged plans, and good class of machinery furnished by your house.

We can fully recommend and indorse your architecture and machinery, and you have liberty to refer to us, any time, any one contemplating building an elevator.

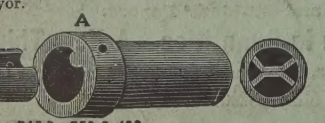
Very truly yours,
BRINSON, HILL & Co.

RURAL CONVEYORS!



Patented April 17th, 1883.

Per & Comstock Patent Backbone
conveyor is the BEST for the following rea-
sons:—Our Coupling has points of advantage
over other couplings in the market. The collar
Coupling fits is made of steel, and has, on
each side, a "A," which fits into the slot "B,"
thus relieving the shaft of all twisting strain.



PAT. FEB. 6, '83.

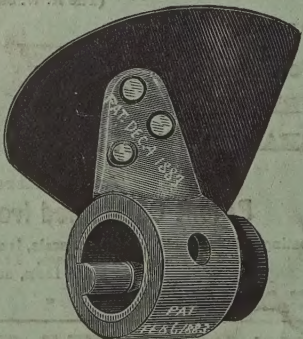
On all Driving Ends and every alternate coupling we furnish our im-
proved Patent Steel Collar and Lug, made in one piece. As the great-
est strain is always on the driving end, this improvement will be ap-
preciated by all users of Spiral Conveyors.

Improvement it admits of disconnecting and taking out one length of conveyor with-
out in any way disturbing the whole line.

On all Driving Ends and every alternate coupling we furnish our im-
proved Patent Steel Collar and Lug, made in one piece. As the great-
est strain is always on the driving end, this improvement will be ap-
preciated by all users of Spiral Conveyors.

OTHER SPECIALTIES.

"Common Sense" and "Empire" Buckets, Elevator Bolts, Steel
Grain Scoops, Mosher Patent Bag Holder, Elevator Turn Heads, Ele-



DRIVING ENDS.

WANTED Live active Agents Engines and Boilers